

Technical Service Data

Model no.: 19PR15C1

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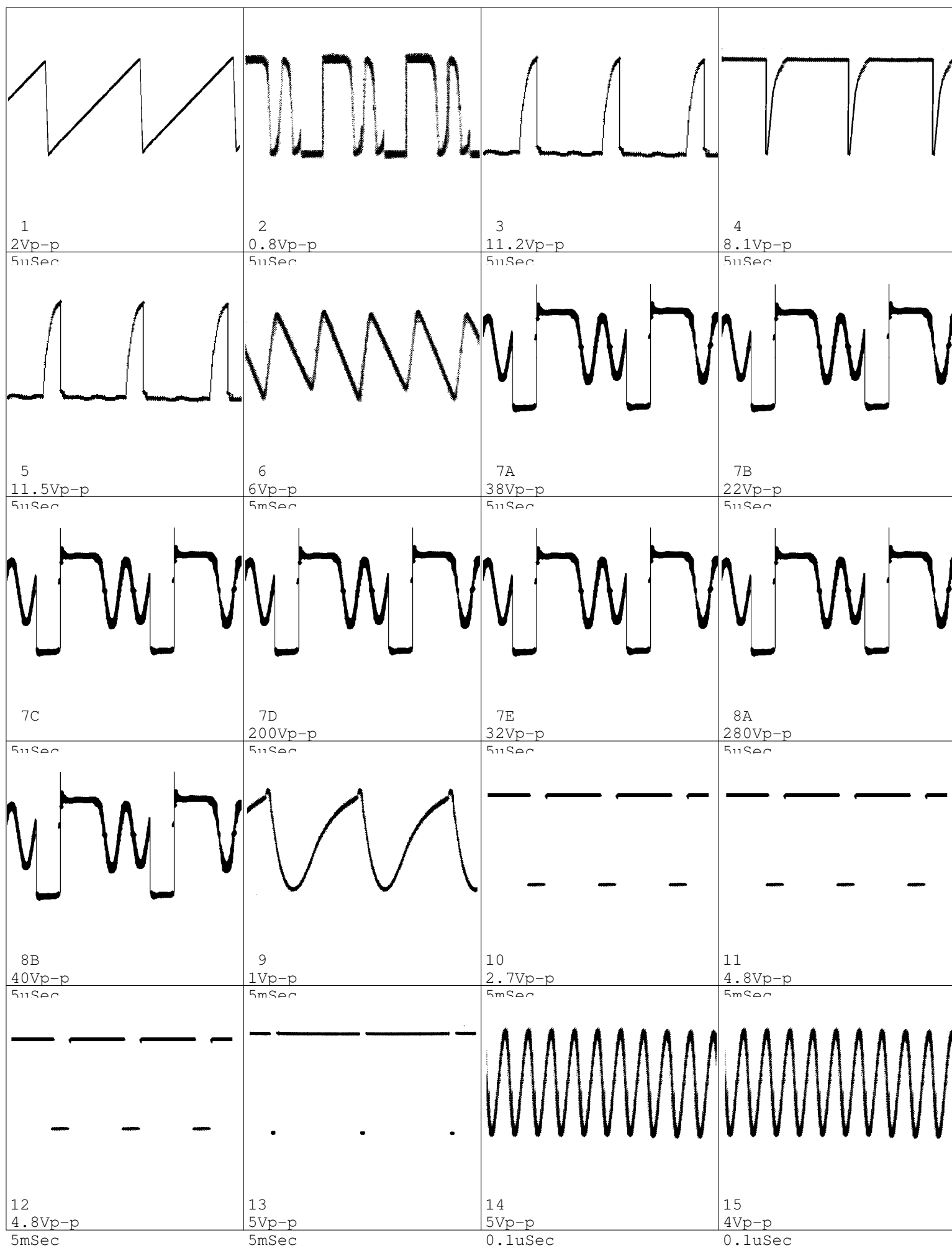
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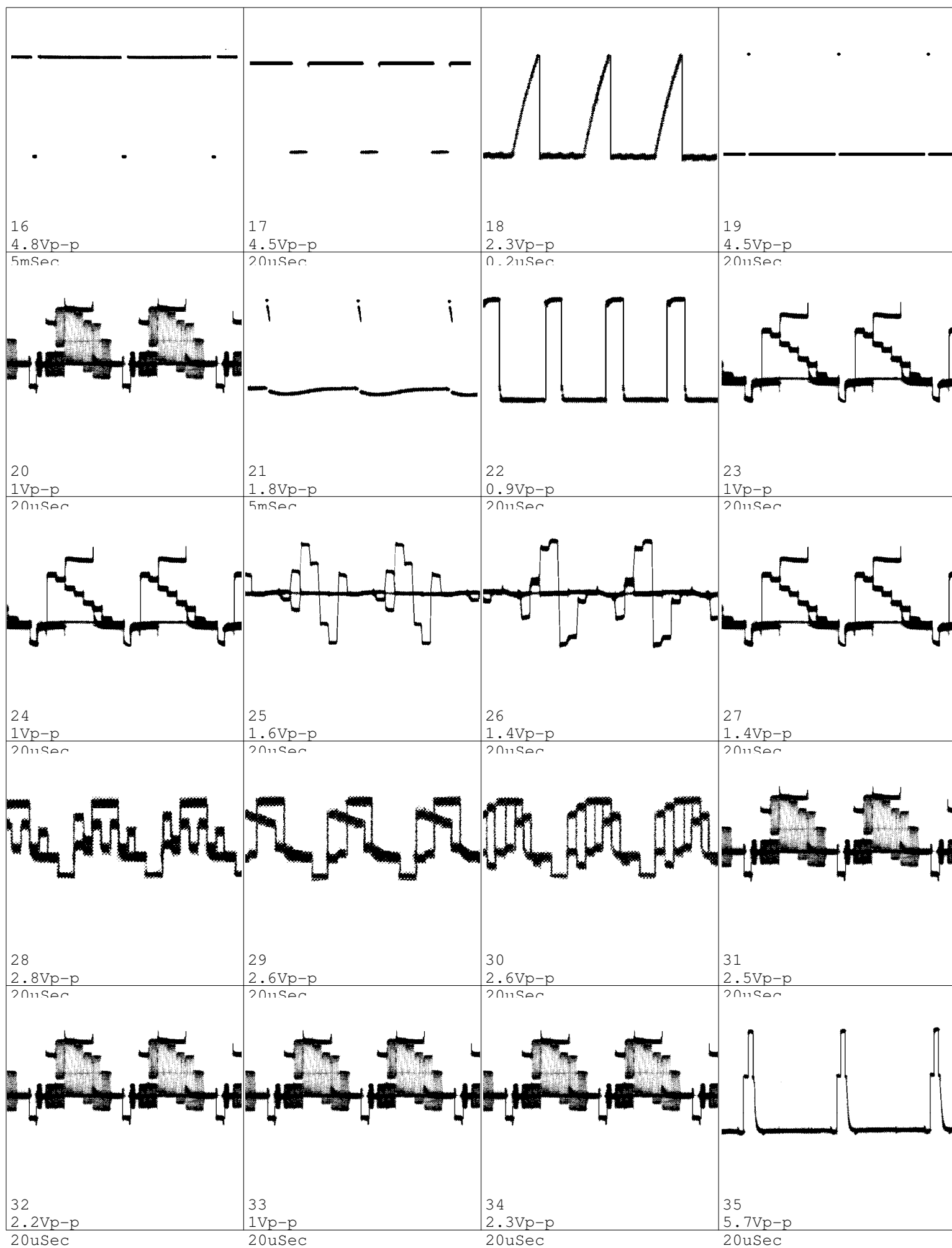
Scope Patterns

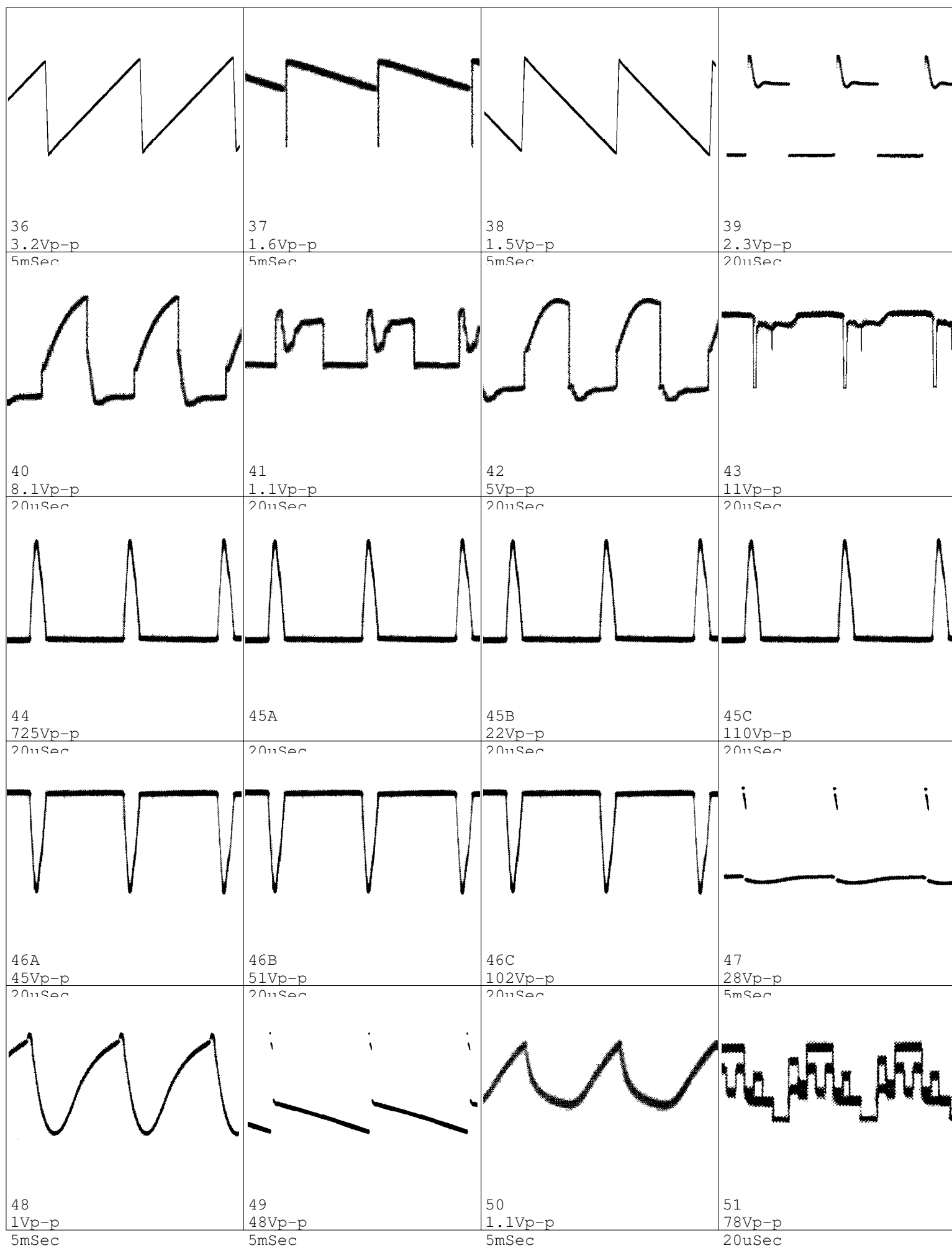
REFER TO SAFETY GUIDELINES

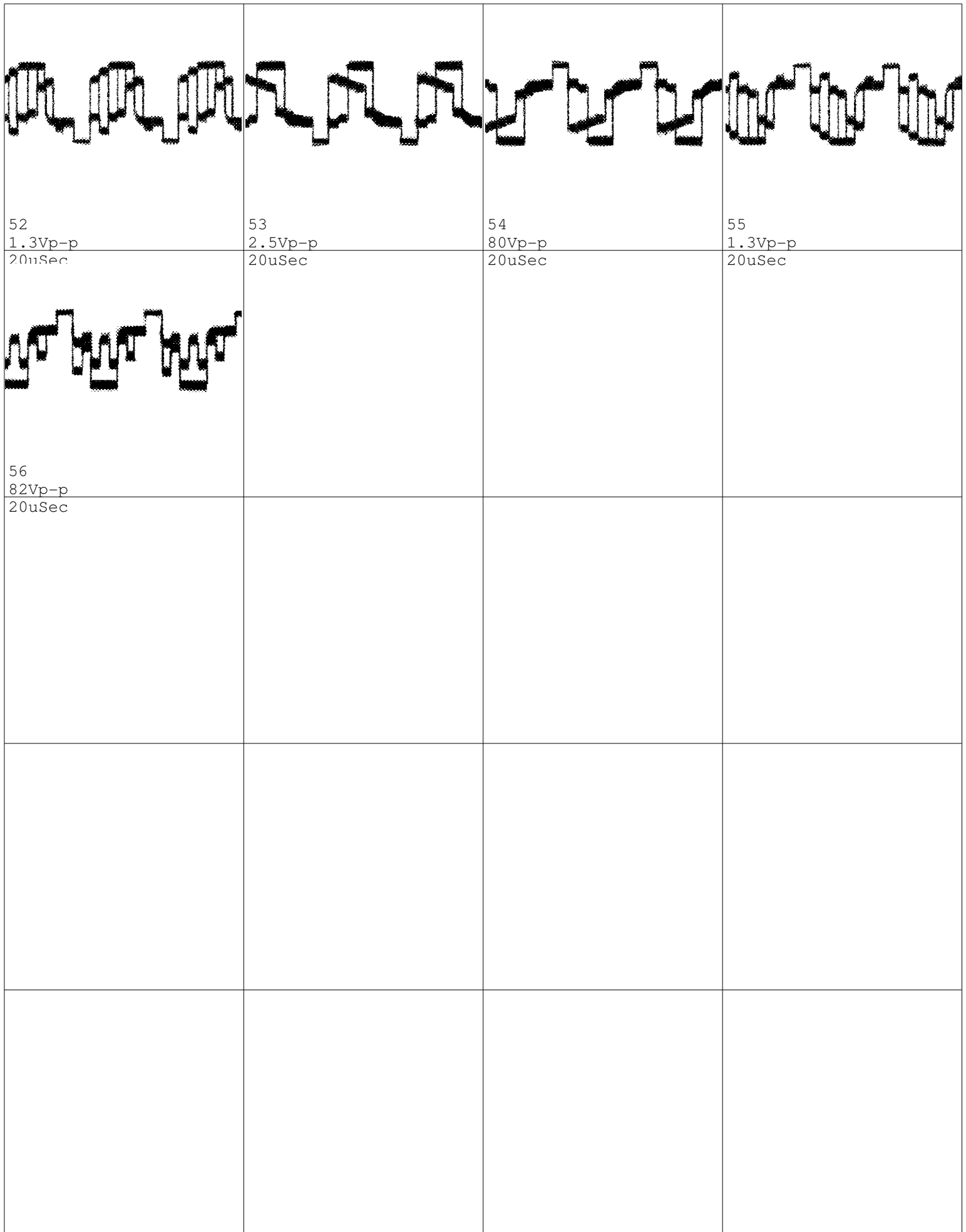
SAFETY NOTICE: ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

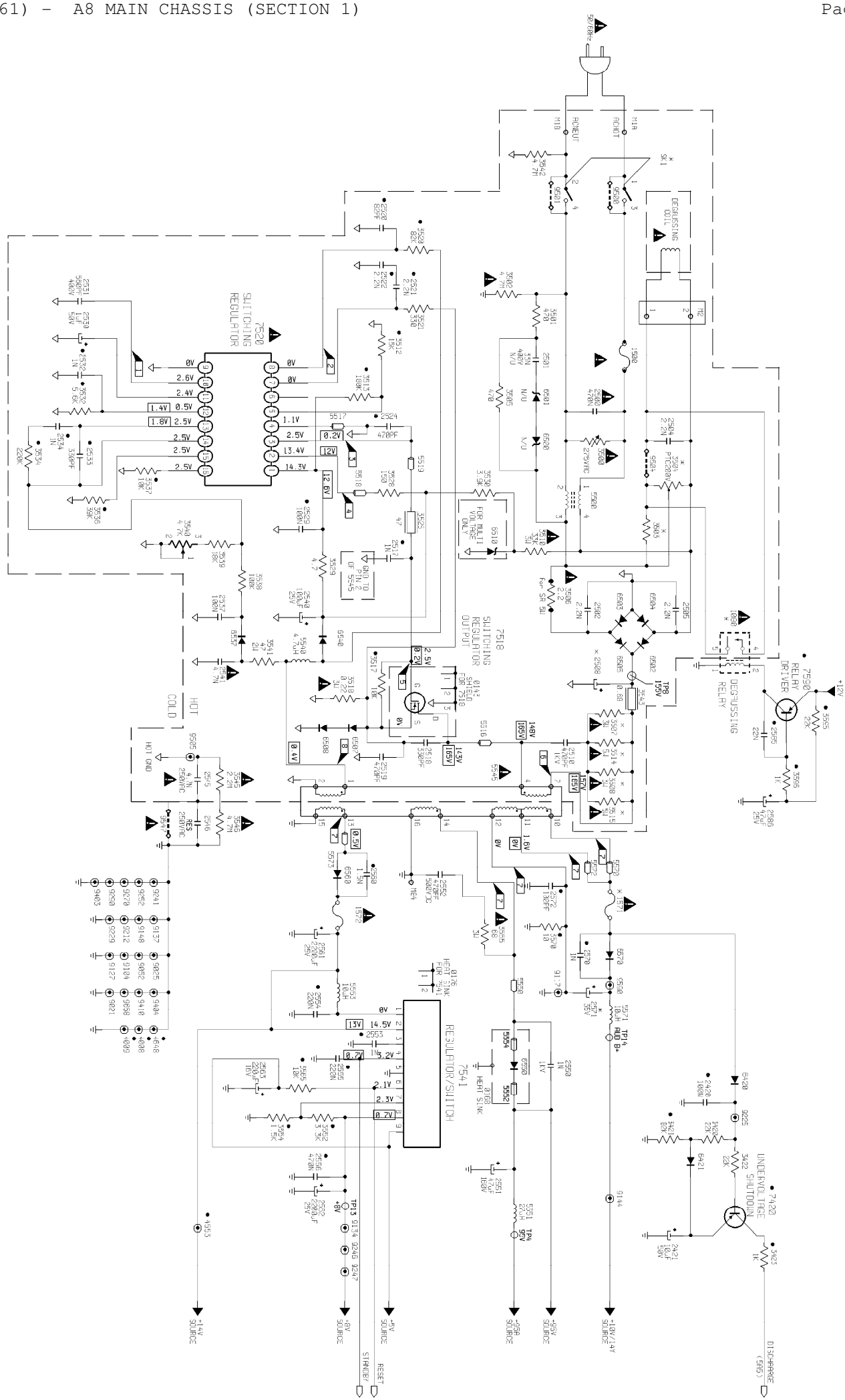
CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

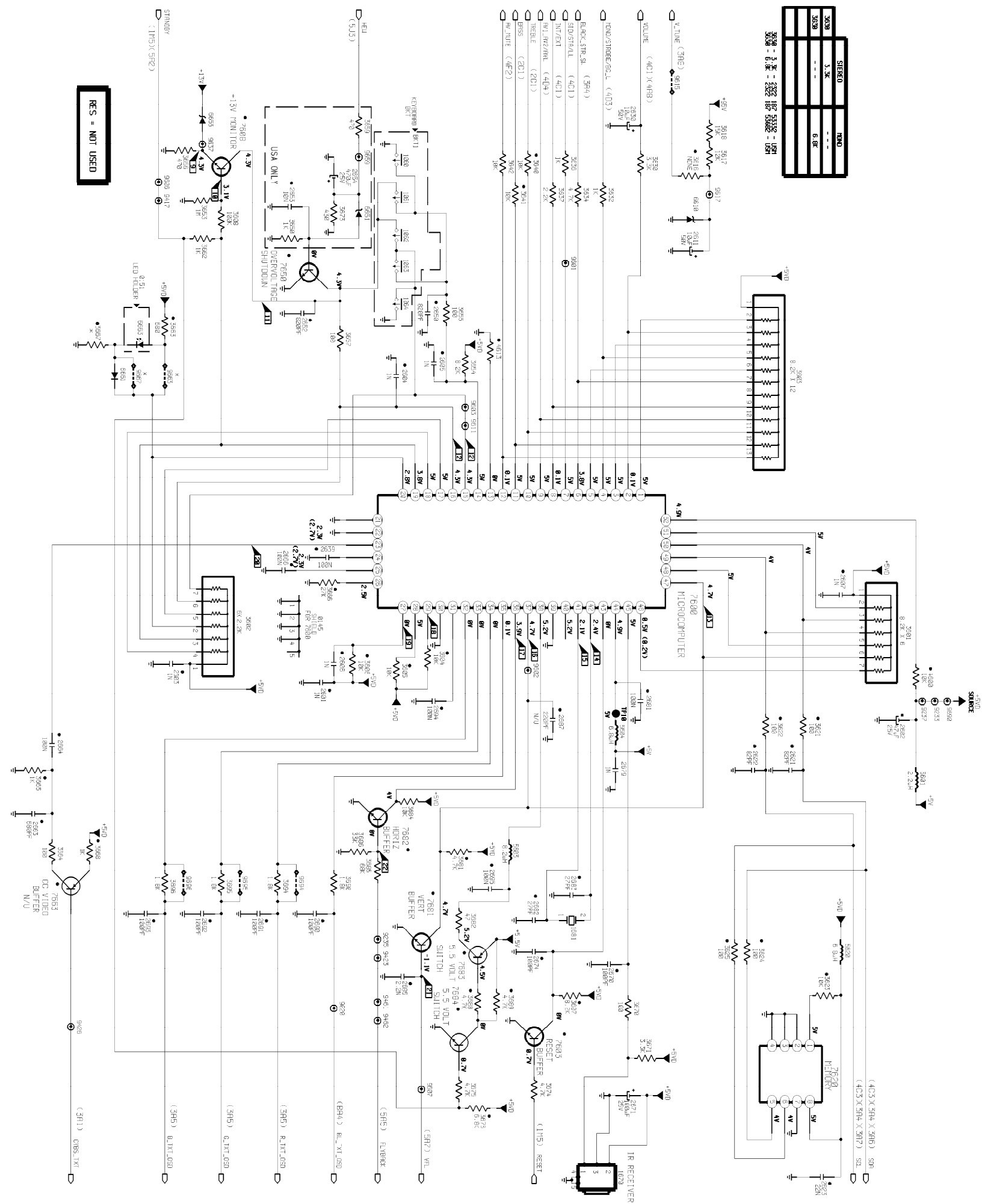


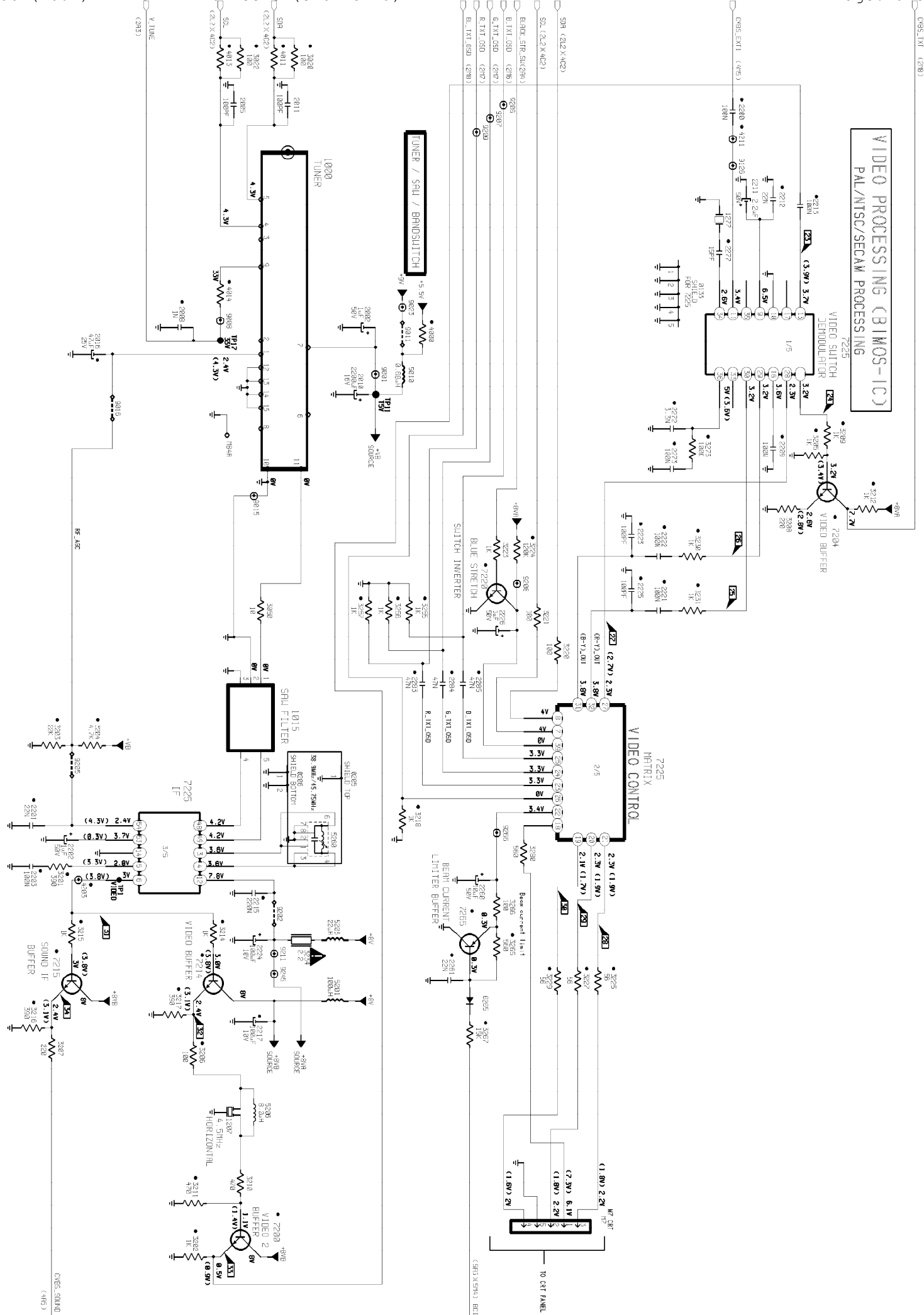


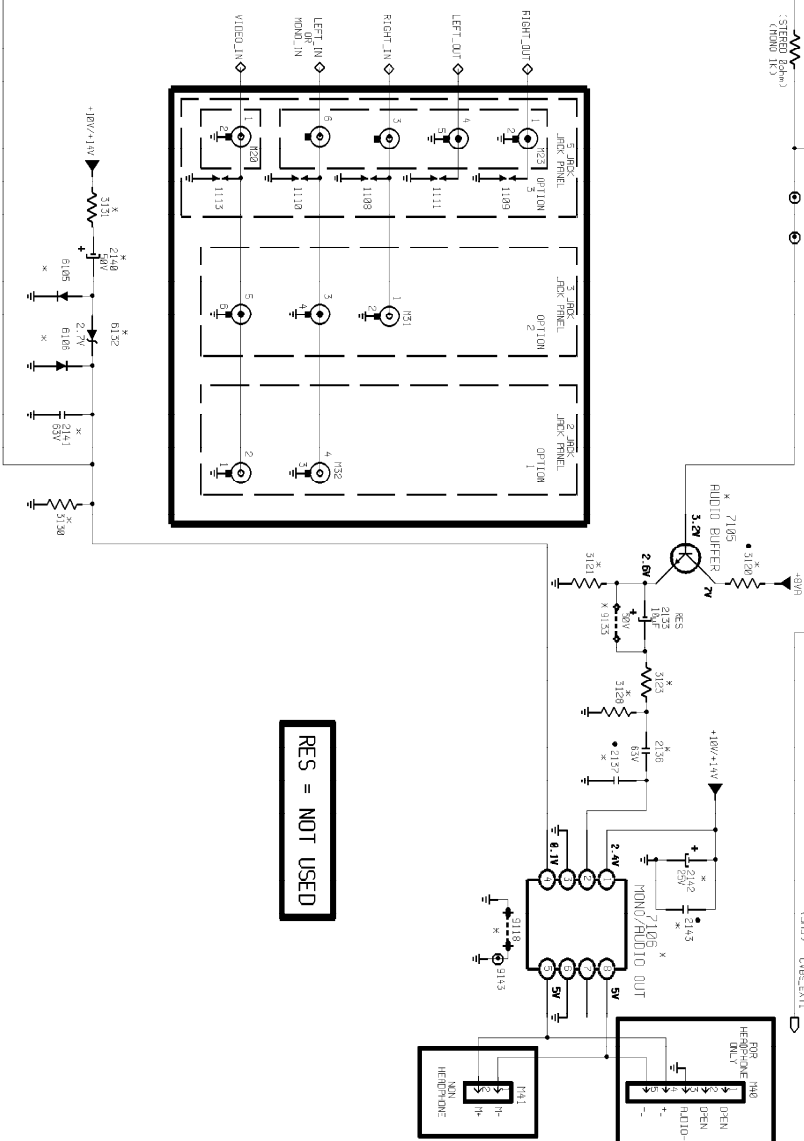




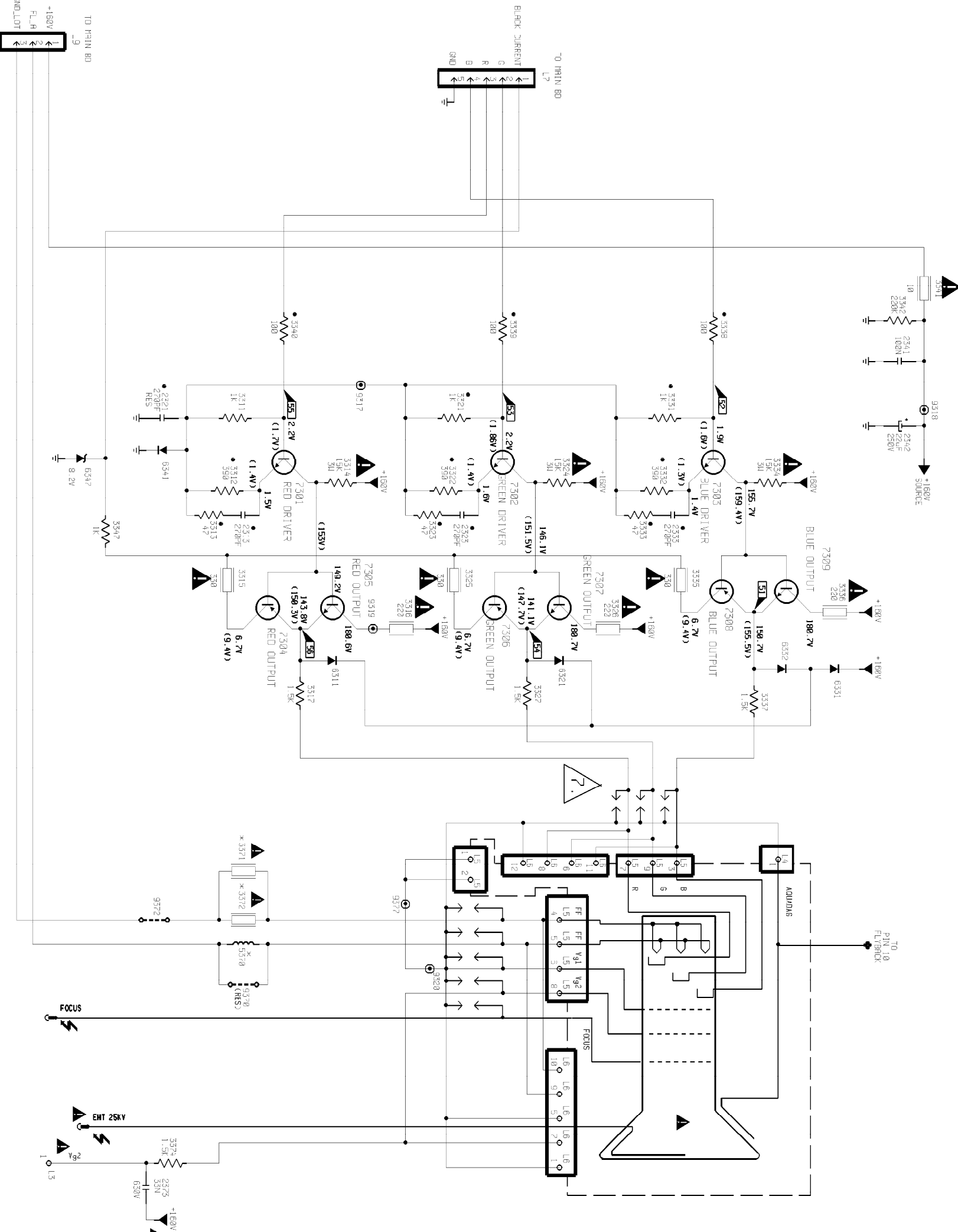


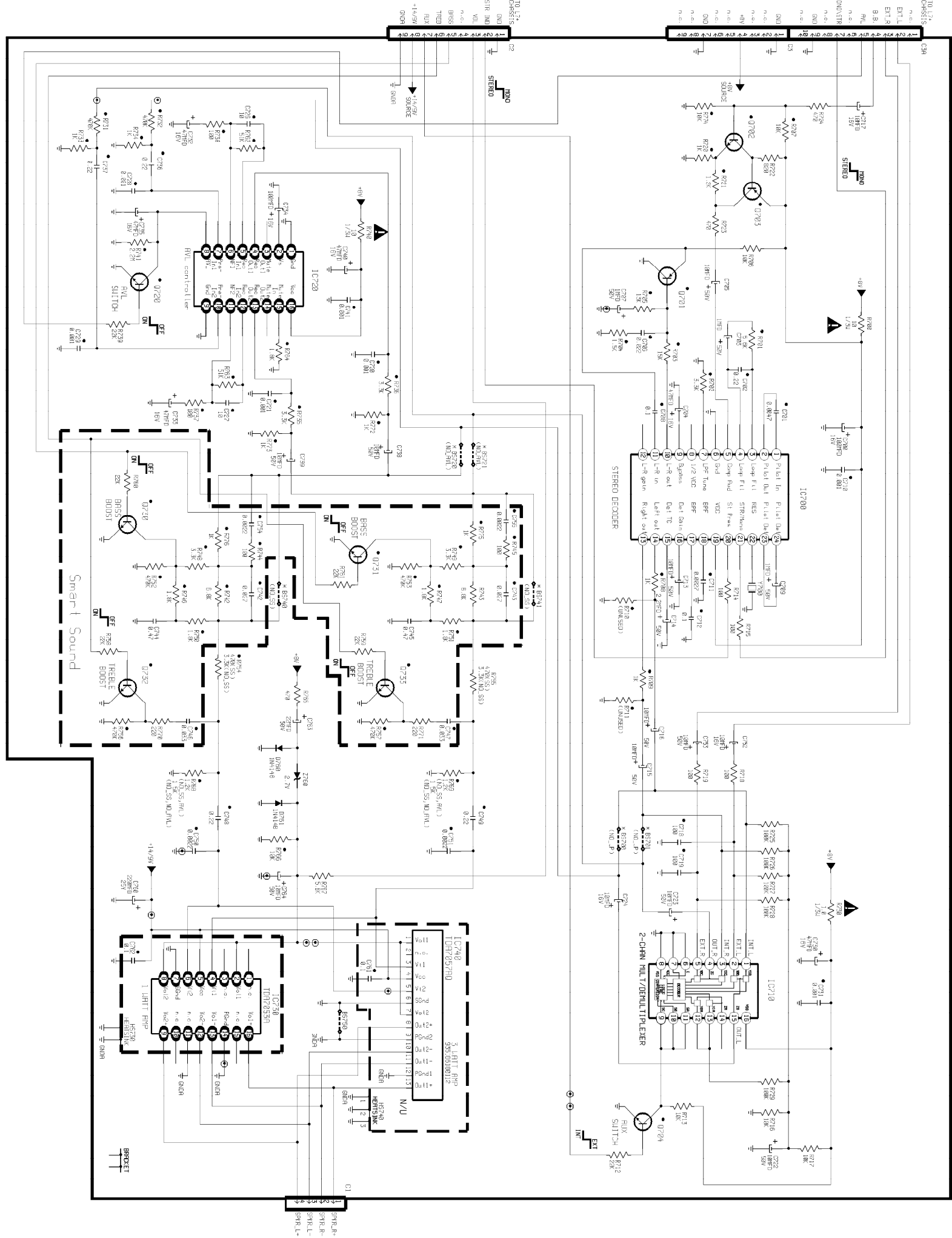


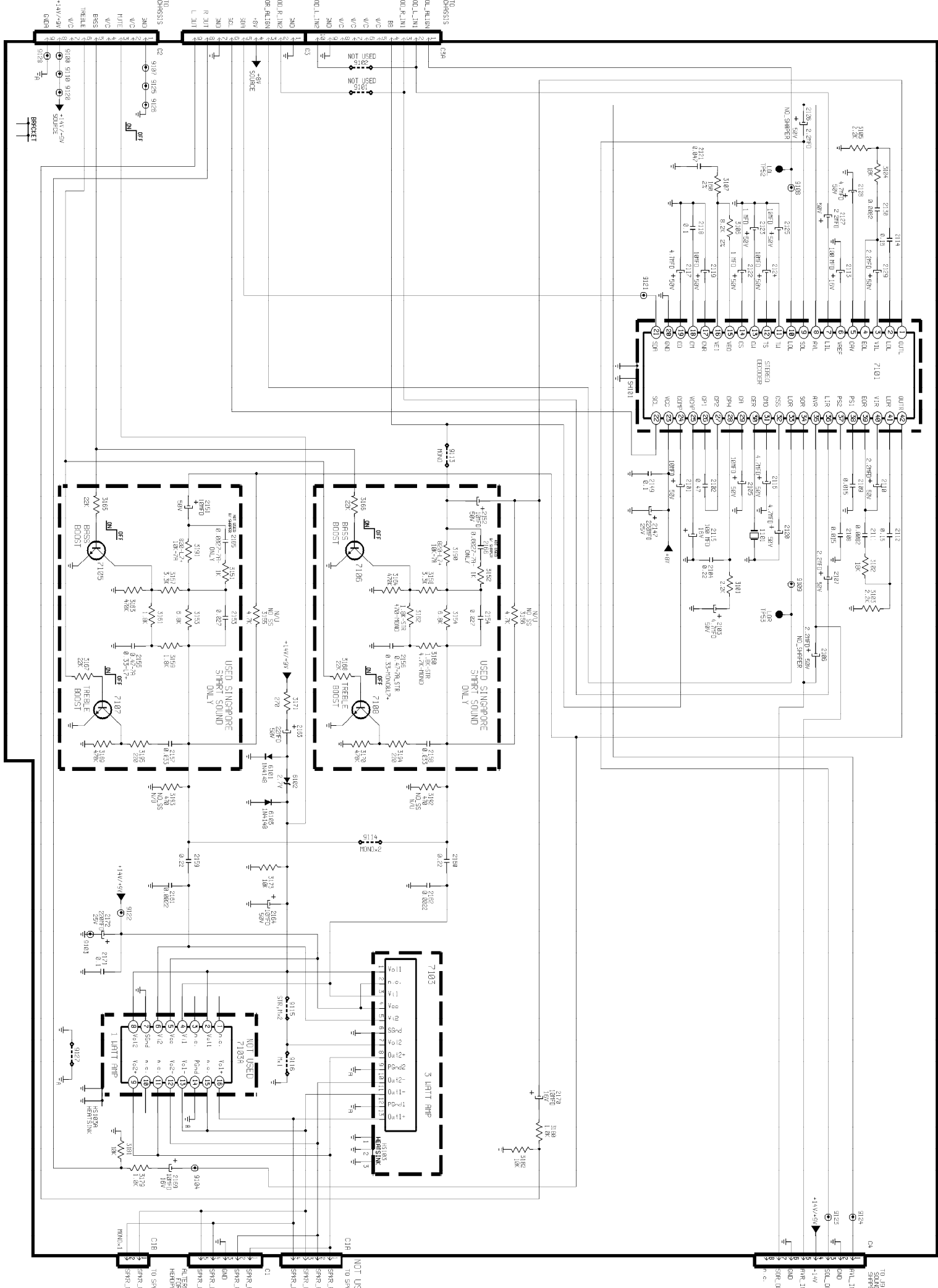


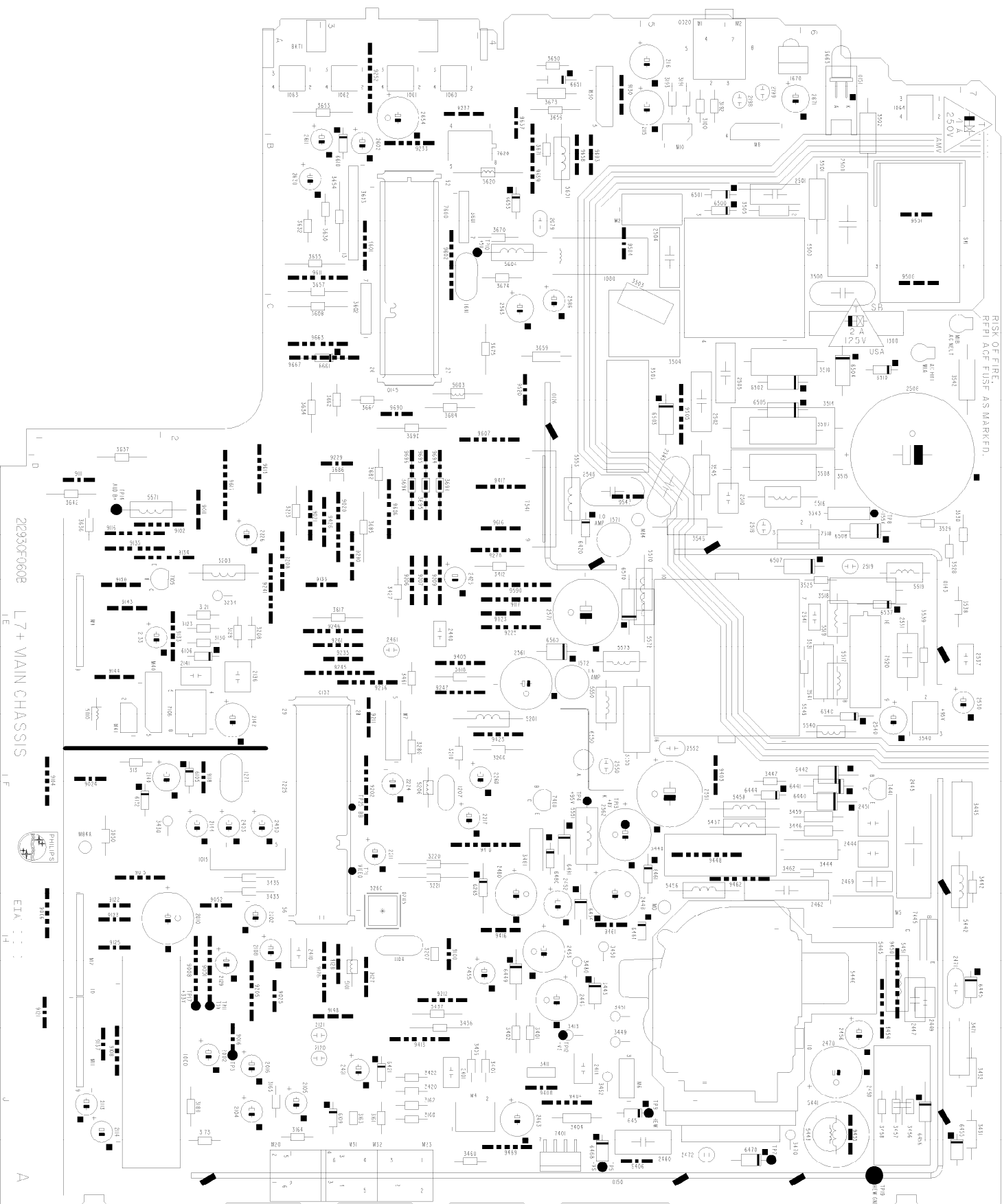


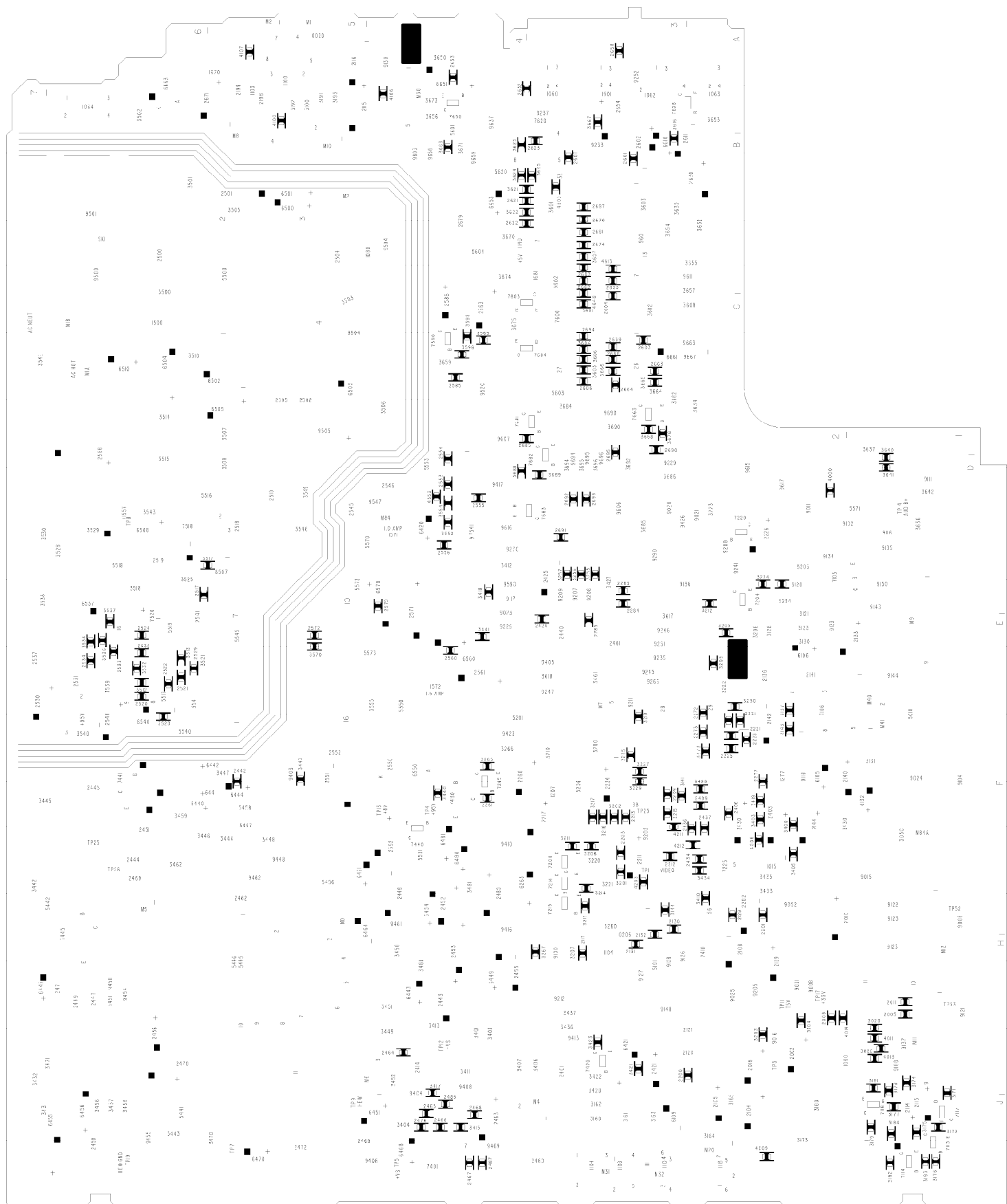


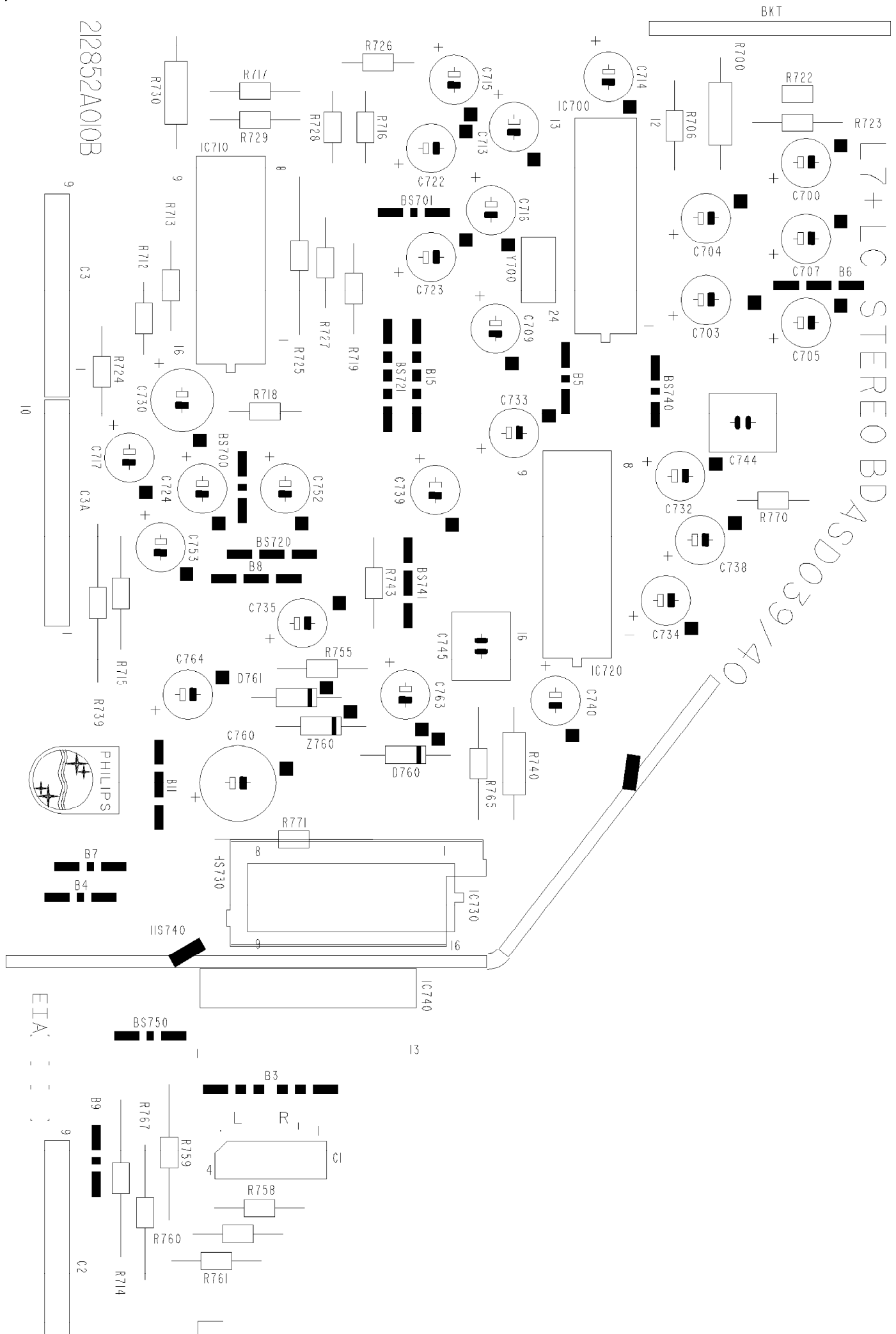


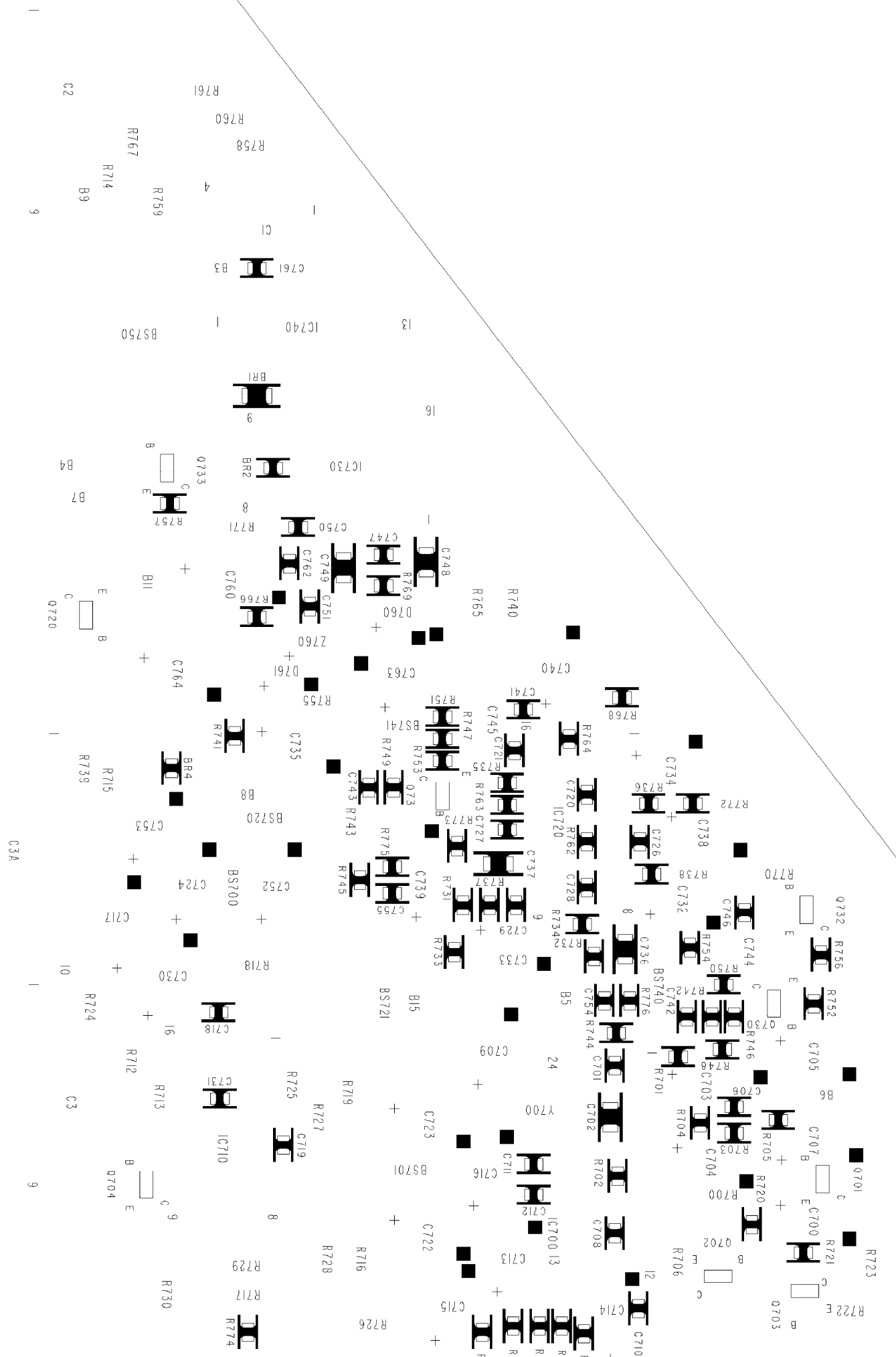












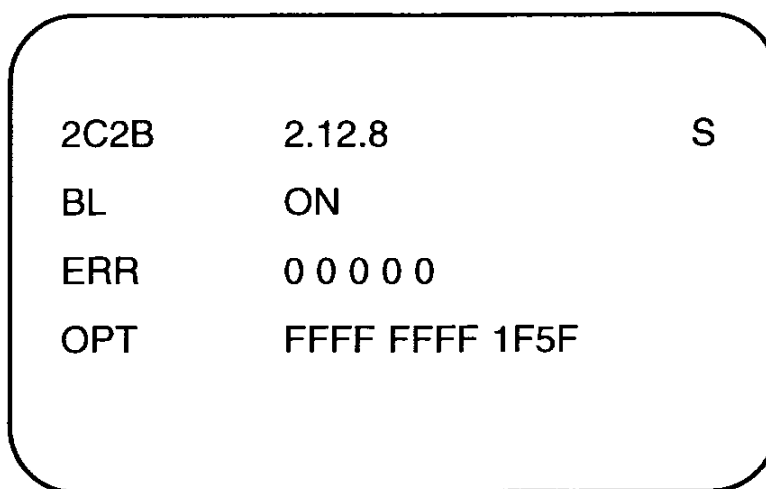
A8 CHASSIS Service Default Mode

The A8 chassis Service Default Mode provides information about features, software version and error codes. To enter the Service Default Mode, press the following key sequence on the remote control transmitter.

0-6-2-5-9-6-Menu

Do not allow the display to time out between entries while keying the sequence. While in the Service Default Mode you may step into customer action by pressing menu. Customer adjustments can be made. By pressing the status button on the remote the customer menu will disappear and you may channel scan. Pressing the menu button on the remote twice will return you to the customer menu, then to the service menu. To exit the Service Default Mode, turn the television off with the remote control transmitter Power button.

When the unit is operating in Service Default Mode, all normal on-screen displays are suppressed and replaced by a special service display. A sample service display is shown.



Explanation of Display

The first number (**2C2B** in the example) is a run timer. This display will increment based on the amount of time the set has been on. The display will also be incremented each time the set is turned on.

The second number (**2.12.8** in the example) shows the software ID (2), the software version (12), and the cluster number (8) DBX or (83) stereo but not DBX.

The S indicates that the Service Default Mode is active. The S is displayed in green; all other OSD items will be displayed in red.

The next line is a coded representation of the features of the set (**BL** in the example). The codes and their meanings are shown below: Cluster 8 used with mono or with ASD042/43 stereo module and Cluster 83 used with ASD039/40 stereo module.

Codes for 8 (DBX Stereo or Mono)

Code Meaning

BA Bass Boost

BL Balance in menu

BO	Boost in menu
CB	Channel Blanking Enable
CL	Child Lock in menu
CT	Color Temperature in menu
DT	Auto Detect BCST/CABL in Autoprogram
FT	Fine Tuning in menu
MS	Message in menu
SA	Spatial Sound in menu
SB	Sound Board (MA is mono, BT is dBX stereo)
SL	SmartSound AVL
SM	Sound Mode
SS	Full Smart Sound (Singapore SS) Enable
SU	Smart Surf Enable in menu
TR	Treble Boost
VI	Factory preset mode
VL	Volume Limiter
XO	External 1 (A/V) input enable and in menu
XS	AV Mono/Stereo Enable (not for USA products)

The following codes are not to be reset. They should be left set at 0

Tun.FOA, FOB

EXT.FOA, FOB

Codes for 83 (Stereo but not DBX)

Code	Meaning
AS	Autoscan Enable
AV	AVL in menu
BA	Bass Boost
BO	Boost in menu
BS	Black Stretch
CB	Channel Blanking Enable
CO	Clock in menu
CT	Color Temperature in menu
DC	Auto Detect BCST/CABL in Autoprogram
MS	Message in menu
SB	Sound Board (MA is mono, BT is dBX stereo)
SL	SmartSound AVL
SM	Sound Mode
SP	Smart Picture enable
SU	Smart Surf Enable in menu
TR	Treble Boost
VI	Factory preset mode
VL	Volume Limiter
XO	External 1 (A/V) input enable and in menu

The following codes are not to be reset. They should be left set at 0

Tun.FOA, FOB

EXT.FOA, FOB

Note that if the memory IC (EEPROM) is replaced during service, the microprocessor will write default values into the EEPROM when the set is initially powered on. No other action is required of the servicer

except to set features and adjust all alignment values.

OPTIONS SETTING

The five most recent errors are encoded on the following line of the display (in the example above, no errors have been recorded, because all five registers display zeroes). The most recent error will be displayed in the register nearest the word "ERROR". The error codes and their meanings are shown below.

Code	Meaning
0	No Error
1	Micro RAM Error
2	General I2C (SCL/SDA) Buss Error
3	EEPROM Checksum Error
4	DBX Stereo Decoder Error
5	Signal Processor Error
6	EEPROM Error
7	Tuner Error (PLL)

The last line of the OSD is a hexadecimal representation of all active features of the set, e.g., FFFF FFFF 1F5F.

To exit the service mode and erase the error codes, turn the unit off with the power button on the remote control, then unplug the ac cord. Breaking the ac ensures that the microprocessor will download new settings from the EEPROM IC when power is reapplied to the set. To save the error codes, unplug the ac cord without turning off the set. When the power is turned back on, the service mode will still be active.

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Pg. SCHEMATIC DIAGRAMS AND PC BOARDS

1. A8 MAIN CHASSIS (SECTION 1)
2. A8 MAIN CHASSIS (SECTION 2)
3. A8 MAIN CHASSIS (SECTION 3)
4. A8 MAIN CHASSIS (SECTION 4)
5. A8 MAIN CHASSIS (SECTION 5)
6. APT189 13", 19" & 20" CRT MODULE
7. ASD039/040 LEAD STEREO (NON DBX) MODULE
8. ASD042/043/047 DBX STEREO MODULE

9. A8 MAIN CHASSIS PCB (TOP)
10. A8 MAIN CHASSIS PCB (BOTTOM)
11. ASD039/040 LEAD STEREO (NON DBX) MODULE PCB (TOP)
12. ASD039/040 LEAD STEREO (NON DBX) MODULE PCB (BOTTOM)
13. ASD042/043 DBX STEREO MODULE PCB
14. APT189 13", 19" & 20" CRT MODULE PCB (TOP)
15. APT189 13", 19" & 20" CRT MODULE PCB (BOTTOM)

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Philips Consumer Electronics

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Manual 7561

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Safety Notes

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CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

GENERAL SAFETY NOTES



IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Philips Consumer Electronics Company** equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various **CAUTIONS** and **NOTICES** which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these **CAUTIONS** and **NOTICES ARE NOT EXHAUSTIVE**. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

** Hereafter throughout this manual, Philips Consumer Electronics Company will be referred to as Philips.

WARNING

Critical components having special safety characteristics are identified with a  or "S" by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol  on the schematics or exploded views. Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards. Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

- Broken Line _____

SAFETY CHECKS

After the original service problem has been corrected, a complete safety check should be made. Be sure to check over the entire set, not just the areas where you have worked. Some previous servicer may have left an unsafe condition, which could be unknowingly passed on to Your customer. Be sure to check all of the following:

FIRE AND SHOCK HAZARD

IMPLOSION


X-RADIATION

LEAKAGE CURRENT COLD CHECK

LEAKAGE CURRENT HOT CHECK

PICTURE TUBE REPLACEMENT

FIRE AND SHOCK HAZARD

1. Be sure all components are positioned in such a way as to avoid the possibility of adjacent component shorts. This is especially important on those chassis which are transported to and from the service shop.
2. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs, and other hardware have been installed in accordance with the original design.
3. Soldering and wiring must be inspected to locate possible cold solder joints, solder splashes, sharp solder points, frayed leads, pinched leads, or damaged insulation (including the ac cord). Be certain to remove loose solder balls and all other loose foreign particles.
4. Check across-the-line components and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layout, lead length, and dress.
5. No lead or component should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces or edges must be avoided.
6. Critical components having special safety characteristics are identified with an '**S**' by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol  on the schematic diagrams and /or exploded views.
7. When servicing any unit, always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose you to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized ac line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords which do not incorporate the polarizing feature should never be used.
9. After reassembly of the unit, always perform an ac leakage test or resistance test from the line cord to all exposed metal parts of the cabinet. Also, check all metal control shafts (with knobs removed), antenna terminals, handles, screws, etc., to be sure the unit may be safely operated without danger of electrical shock.

* **Broken line** _____

IMPLOSION

1. All picture tubes used in current model receivers are equipped with an integral implosion system. Care should always be used, and safety glasses worn, whenever handling any picture tube. Avoid scratching or otherwise damaging the picture tube during installation.
2. Use only replacement tubes specified by the manufacturer.

X-RADIATION

1. Be sure procedures and instructions to all your service personnel cover the subject of X-radiation. Potential sources of X-rays in TV receivers are the picture tube and the high voltage circuits. The basic precaution which must be exercised is to keep the high voltage at the factory recommended level.
2. To avoid possible exposure to X-radiation and electrical shock, only the manufacturer's specified anode connectors must be used.
3. It is essential that the service technician has an accurate HV meter available at all times. The calibration of this meter should be checked periodically against a reference standard.
4. When the HV circuitry is operating properly there is no possibility of an X-radiation problem. High voltage should always be kept at the manufacturer's rated value - no higher - for optimum performance. Every time a color set is serviced, the brightness should be run up and down while monitoring the HV with a meter to be certain that the HV is regulated correctly and does not exceed the specified value. We suggest that you and your technicians review test procedures so that HV and HV regulation are always checked as a standard servicing procedure, and the reason for this prudent routine is clearly understood by everyone. It is important to use an accurate and reliable HV meter. It is recommended that the HV reading be recorded on each customer's invoice, which will demonstrate a proper concern for the customer's safety.
5. When troubleshooting and making test measurements in a receiver with a problem of excessive high voltage, reduce the line voltage by means of a Variac to bring the HV into acceptable limits while troubleshooting. Do not operate the chassis longer than necessary to locate the cause of the excessive HV.
6. New picture tubes are specifically designed to withstand higher operating voltages without creating undesirable X-radiation. It is strongly recommended that any shop test fixture which is to be used with the new higher voltage chassis be equipped with one of the new type tubes designed for this service. Addition of a permanently connected HV meter to the shop test fixture is advisable. The CRT types used in these new sets should never be replaced with any other types, as this may result in excessive X-radiation.
7. It is essential to use the specified picture tube to avoid a possible X-radiation problem.
8. Most TV receivers contain some type of emergency "Hold Down" circuit to prevent HV from rising to excessive levels in the presence of a failure mode. These various circuits should be understood by all technicians servicing them, especially since many hold down circuits are inoperative as long as the receiver performs normally.

LEAKAGE CURRENT COLD CHECK

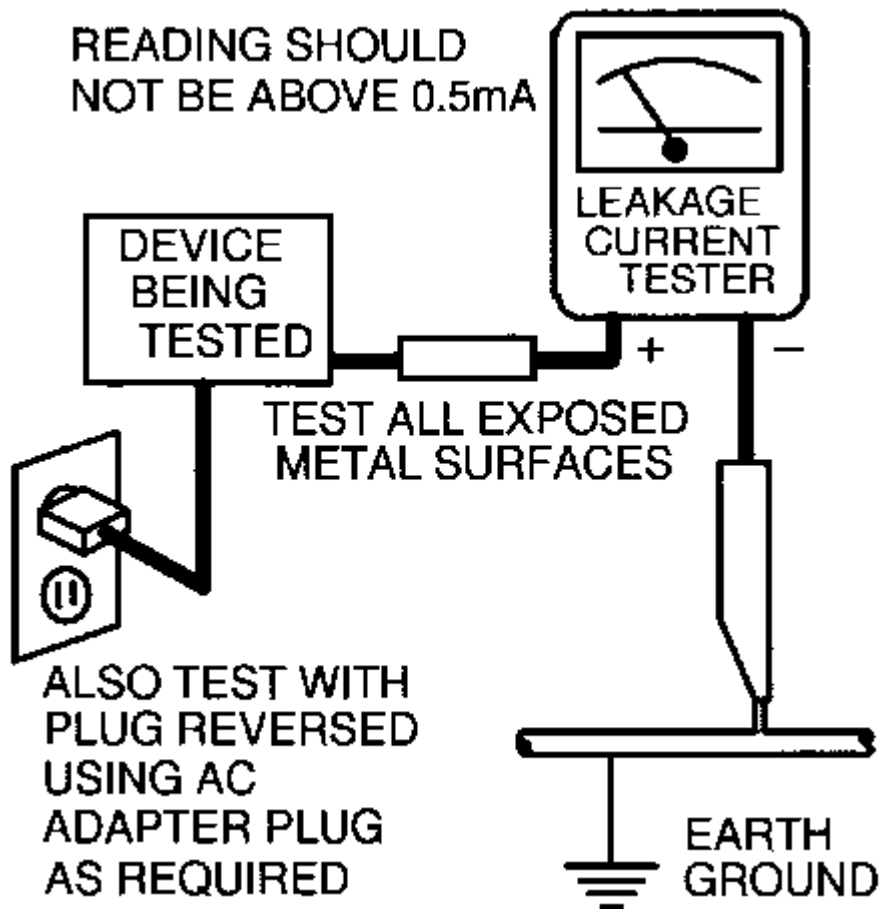
1. Unplug the ac line cord and connect a jumper between the two prongs of the plug.
2. Turn on the power switch.
3. Measure the resistance value between the jumpered ac plug and all exposed cabinet parts of the receiver, such as screw heads, antennas, and control shafts. When the exposed metallic part has a return path to the chassis, the reading should be between 1 megohm and 5.2 megohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity. Remove the jumper from the ac line cord.

LEAKAGE CURRENT HOT CHECK

1. Do not use an isolation transformer for this test. Plug the completely reassembled receiver directly into the ac outlet.
2. Connect a **1.5k, 10W resistor** paralleled by a **0.15uF. capacitor** between each exposed metallic cabinet part and a **good earth ground** such as a water pipe, as shown below.
3. Use an ac voltmeter with at least 5000 ohms/volt sensitivity to measure the potential across the resistor.
4. **The potential at any point should not exceed 0.75 volts.** A leakage current tester may be used to make this test; leakage current must not exceed 0.5milliamp. If a measurement is outside of the specified limits, there is a possibility of shock hazard. The receiver should be repaired and rechecked before returning it to the customer.
5. **Repeat the above procedure with the ac plug reversed.** (Note: An ac adapter is necessary when a polarized plug is used. Do not defeat the polarizing feature of the plug.)

OR

With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. **(Do not use an isolation transformer during this test.)** Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). **With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milliamp.** Reverse the instrument power cord plug in the outlet and repeat the test. See graphic below.



PICTURE TUBE REPLACEMENT

The primary source of X-radiation in this television receiver is the picture tube. The picture tube utilized in this chassis is specially constructed to limit X-radiation emissions. For continued X-radiation protection, the replacement tube must be the same type as the original, including suffix letter, or a Philips approved type.

PARTS REPLACEMENT

Many electrical and mechanical parts in Philips television sets have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. The use of a substitute part which does not have the same safety characteristics as the Philips recommended replacement part shown in this service manual may create shock, fire, or other hazards

TV SAFETY NOTES

SAFETY CHECKS

IMPLOSION

X-RADIATION
PICTURE TUBE REPLACEMENT
PARTS REPLACEMENT

WARNING

Before removing the CRT anode cap, turn the unit **OFF** and short the **HIGH VOLTAGE** to the **CRT DAG** ground.

SERVICE NOTE: The **CRT DAG** is not at chassis ground.

TV-VCR COMBI SAFETY NOTES

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

SAFETY PRECAUTIONS FOR TV CIRCUITS

1. Before returning an instrument to the customer, always make a safety check of the entire instrument, including, but not limited to, the following items:
 - a. Be sure that no built-in protective devices are defective or have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.
 - b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.
 - c. Do a LEAKAGE CURRENT CHECK

ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

d. **X-Radiation and High Voltage Limits** - Because the picture tube is the primary potential source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original. Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place. High voltage must be measured each time servicing is performed that involves B+, horizontal deflection or high voltage. Correct operation of the X-radiation protection circuits also must be reconfirmed each time they are serviced. (X-radiation protection circuits also may be called "horizontal disable" or "hold down.") Read and apply the high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications given on instrument labels and in the **Product Safety & X-Radiation** Warning note on the service data chassis schematic. High voltage is maintained within specified limits by close tolerance safety-related components/adjustments in the high-voltage circuit. If high voltage exceeds specified limits, check each component specified on the chassis schematic and take corrective action.

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.

3. **Design Alteration Warning** - Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

4. **Picture Tube Implosion Protection Warning** - The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.

5. Hot Chassis Warning

a. Some TV receiver chassis are electrically connected directly to one conductor of the ac power cord and may be serviced safely without an isolation transformer only if the ac power plug is inserted so that the chassis is connected to the ground side of the ac power source. To confirm that the ac power plug is inserted correctly, with an ac voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the ac power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.


b. Some TV receiver chassis normally have 85Vac (RMS) between chassis and earth ground regardless of the ac plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the ac power source, for both personnel and test equipment protection. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the ac power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.

6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: **a.** near sharp edges, **b.** near thermally hot parts - be sure that leads and components do not touch

thermally hot parts, **c.** the ac supply, **d.** high voltage, and **e.** antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check ac power cord for damage.

7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

PRECAUTIONS DURING SERVICE

A. Parts identified by the  symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.

Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

- 1) Wires covered with PVC tubing
- 2) Double insulated wires
- 3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

- 1) Insulation Tape
- 2) PVC tubing
- 3) Spacers
- 4) Insulators for transistors

E. When replacing ac primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

G. Check that replaced wires do not contact sharp edged or pointed parts.

H. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector

When replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, in order to prevent shock hazards, perform carefully and precisely the following steps.

Replacement procedure

- 1) Remove the old connector by cutting the wires at a point close to the connector. **Important:** Do not re-use a connector (discard it).

- 2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
- 3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
- 4) Use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the VCR connectors, first, disconnect the ac plug from the ac supply socket.

SAFETY CHECK AFTER SERVICING

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

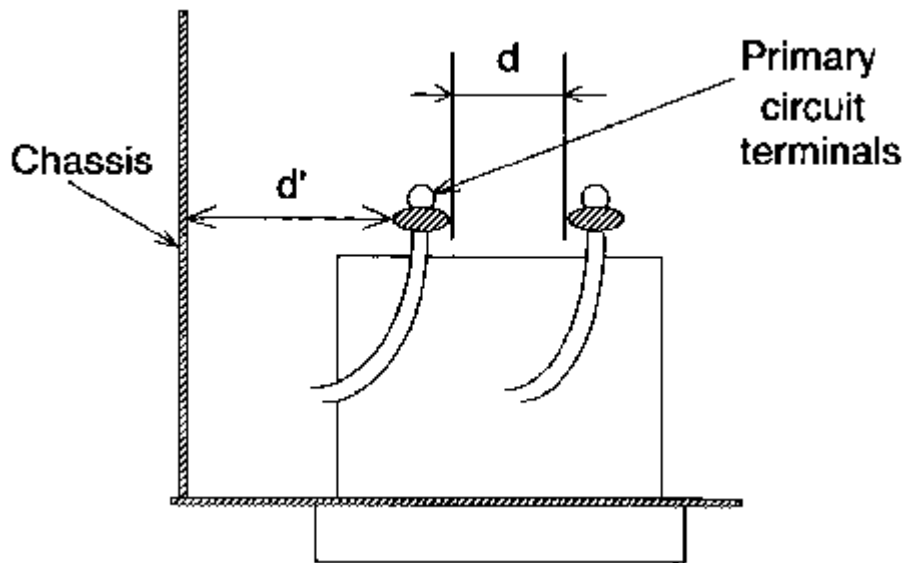
1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See graphic below)

Table 1 : Ratings for selected area

AC Line Voltage	Region	Clearance Distance (d) (d')
110 to 130 V	USA or CANADA	> 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.



2. LEAKAGE CURRENT CHECKS

VCR SAFETY NOTES

FIRE & SHOCK HAZARD (VCR)

1. Be sure that all components are positioned in such a way to avoid possibility of shorts to adjacent components. This is especially important on those chassis which are transported to and from the repair shop.
2. Always replace all protective devices such as insulators and barriers after working on a set.
3. Check for damaged insulation on wires including the ac cord.
4. Check across-the-line components for damage and replace if necessary.
5. After re-assembly of the unit, always perform an ac leakage test on the exposed metallic parts of the cabinet such as the knobs, antenna terminals, etc. to be sure the set is safe to operate without danger of electrical shock. **Do not use a line isolation transformer during this test.** Use an ac voltmeter having 5000 ohms per volt or more sensitivity in the following manner: Connect a 1500 ohm 10 watt resistor, paralleled by 0.15 MFD ac type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the ac voltage across the combination 1500 ohm resistor and 0.15 MFD capacitor. Reverse the ac plug on the set and repeat ac voltage measurements again for each exposed metallic part. Voltage measured must not exceed 0.6 volts R.M.S. This corresponds to 0.4 milliamp ac. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

GENERAL

Power Supply-This receiver is designed for operation on 120 Volts, 60Hz alternating current (ac) only. Never connect to a supply having a different frequency or voltage.

IMPORTANT NOTICE

This device employs many circuits, components, and mechanical parts designed for protection against fire, shock and RF interference. For continued safety any servicing should be performed by qualified personnel and exact replacement parts should be used. Under no circumstances should the original design be altered.

PRODUCT SAFETY GUIDELINES FOR ALL PRODUCTS

CAUTION: Do not modify any circuit. Service work should be performed only after you are thoroughly familiar with all of the following safety checks. Risk of potential hazards and injury to the user increases if safety checks are not adhered to.

USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.

PREVENTION OF ELECTROSTATIC DISCHARGE (ESD)

Some semiconductor solid state devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate an electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : Be sure no power is applied to the chassis or circuit and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your feet from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device.)

NOTE to CATV system Installer:

This reminder is provided to call the CATV system installer's attention to article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

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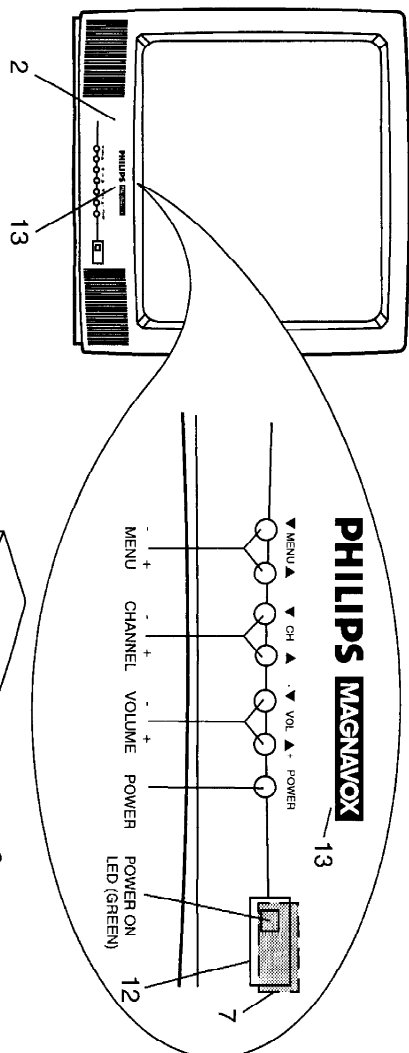
Mechanical Diagrams

REFER TO SAFETY GUIDELINES

SAFETY NOTICE: ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

TYPICAL TABLE MODEL EXPLODED VIEW



REF.	DESCRIPTION	REF.	DESCRIPTION
1	Button Assembly	9	Deflection Yoke Wedge (3 or 4 Used)
2	Cabinet Front	10	Degaussing Coil
3	Chassis Frame	11	Jack Panel Plastic
4	Clip f/Anode Lead	12	Lens f/IR Rec.*
5	Convergence & Purity Asm.	13	Name Plate
6	CRT	14	Speaker
7	Crystal*	15	Speaker Grille
8	Deflection Yoke		

*NOT ON ALL MODELS

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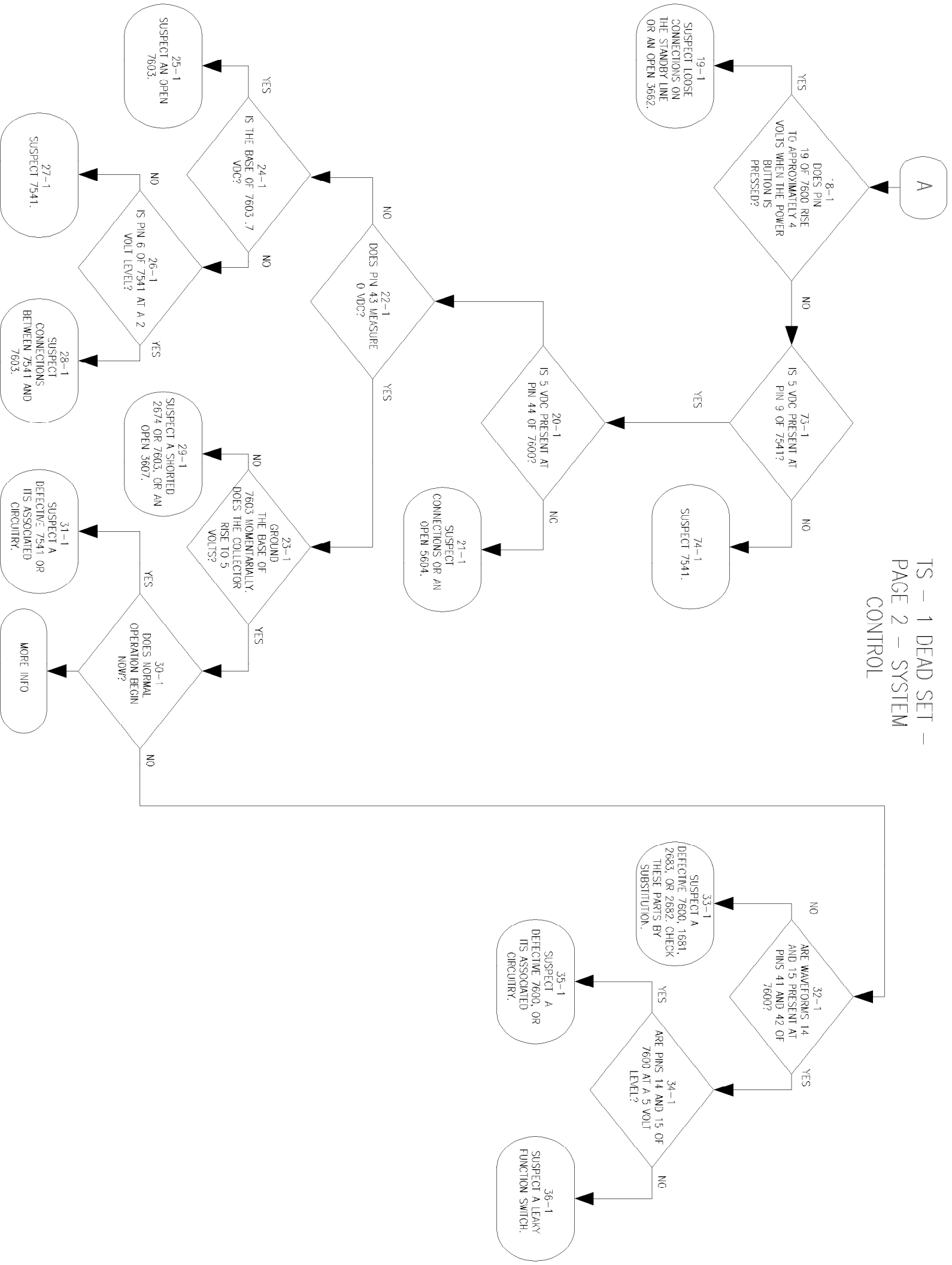
Troubleshooting

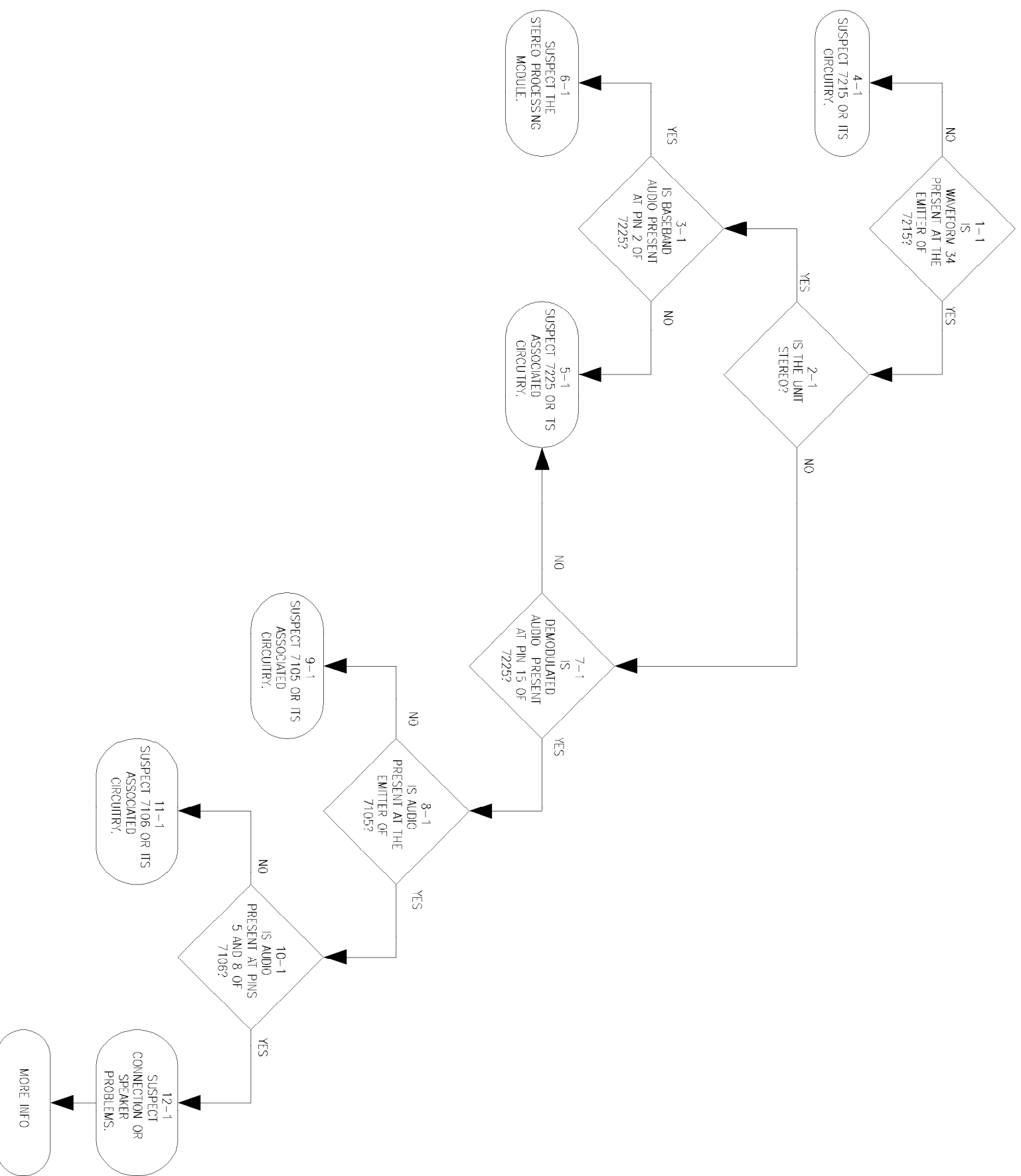
REFER TO SAFETY GUIDELINES

SAFETY NOTICE: ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

TS - 1 DEAD SET - PAGE 2 - SYSTEM CONTROL





TS - 2 NO VIDEO

BEGIN

1-1
IS AUDIO
PRESENT?

NO

YES

2-1
IS THE
VB SOURCE
PRESENT AT PIN 7
OF THE
TUNER?

YES

NO

3-1
IS
CLOCK AND DATA
SERIAL
ACTIVITY
PRESENT AT
PINS 4 AND
5?

YES

NO

8-1
SUSPECT AN OPEN
5010, 4000, OR
CONNECTION
PROBLEMS.

4-1
IS 33 VOLTS,
TUNING VOLTAGE,
PRESENT AT
TP17?

YES

NO

5-1
USE THE REMOTE AND
SELECT RANDOM
CHANNELS WITH THE
NUMERIC BUTTONS.

10-1
SUSPECT AN OPEN
3618 OR 3617, OR A
SHORTED 66.0 OR
2611, OR BOTH.

9-1
SUSPECT
CONNECTION
PROBLEMS BETWEEN
PINS 4 AND 5 OF THE
TUNER AND ...

9-2
49 AND 50 OF 7600.

20-1
SUSPECT THE CRT OR
ITS ASSOCIATED
CIRCUITRY.

17-1
ARE VIDEO
WAVEFORMS 30, 29,
AND 28 PRESENT AT
PINS 19, 20, AND 21
OF 7225?

YES

NO

16-1
SUSPECT 7225 OR ITS
ASSOCIATED
CIRCUITRY.

15-1
IS VIDEO
WAVEFORM 27
PRESENT AT PIN
27 OF
7225?

YES

NO

14-1
SUSPECT 7200 OR ITS
CIRCUITRY.

12-1
IS VIDEO
WAVEFORM 32
PRESENT AT THE
EMITTER OF
7214?

YES

NO

11-1
SUSPECT 7214 OR ITS
CIRCUITRY.

13-1
IS VIDEO
WAVEFORM 33
PRESENT AT THE
EMITTER OF
7200?

YES

NO

18-1
IS PIN 22 OF 7225
>3 VOLTS DC?

YES

NO

23-1
SUSPECT 7225 OR ITS
ASSOCIATED
CIRCUITRY.

19-1
SUSPECT 7265 OR ITS
ASSOCIATED
CIRCUITRY.

21-1
CAN AN IF SIGNAL
BE INJECTED AT
PINS 48 OR 49 OF
7225?

NO

YES

22-1
SUSPECT A
DEFECTIVE 1015 OR
ITS ASSOCIATED
CIRCUITRY.

7-1
SUSPECT AN OPEN
4014 OR A DEFECTIVE
TUNER.

5-2
DOES THE
VOLTAGE AT PIN 9
OF THE TUNER
CHANGE?

NO

YES

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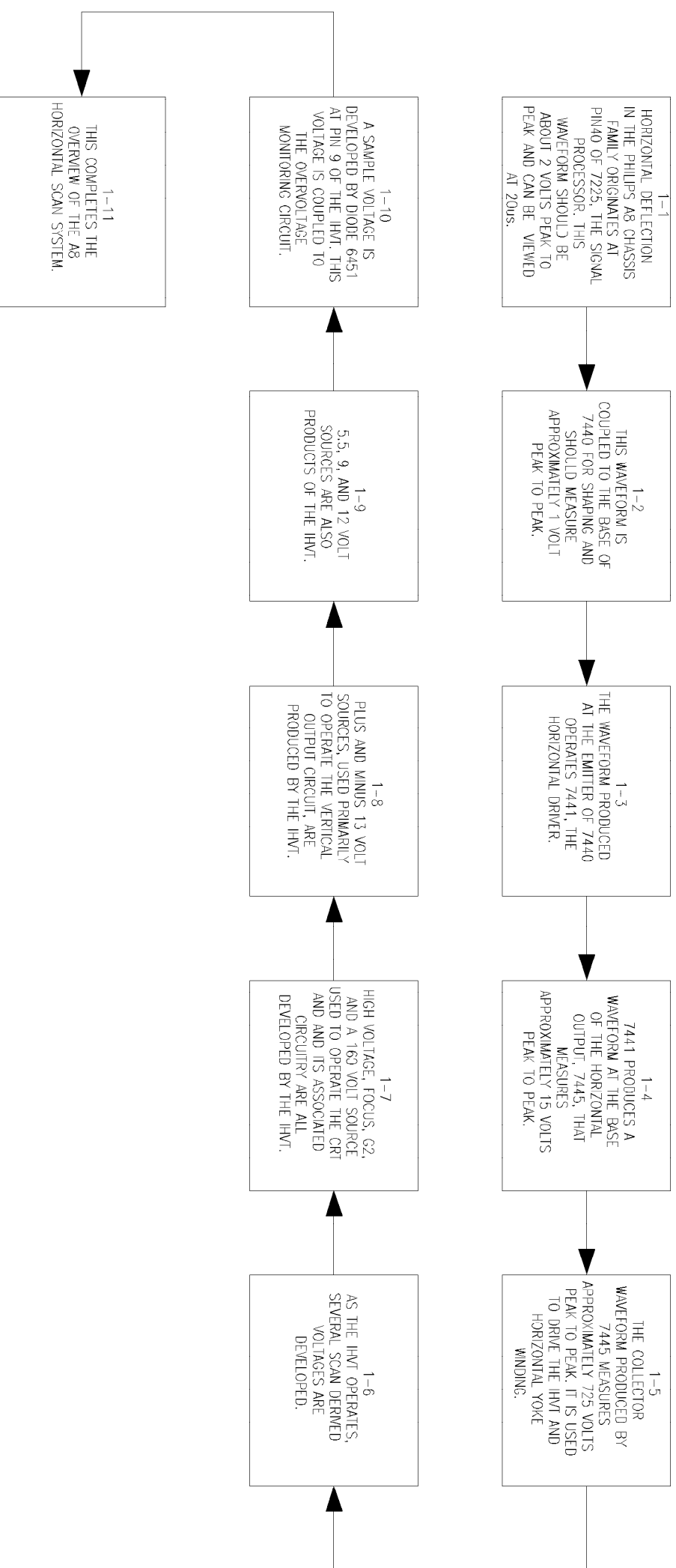
Training Information

REFER TO SAFETY GUIDELINES

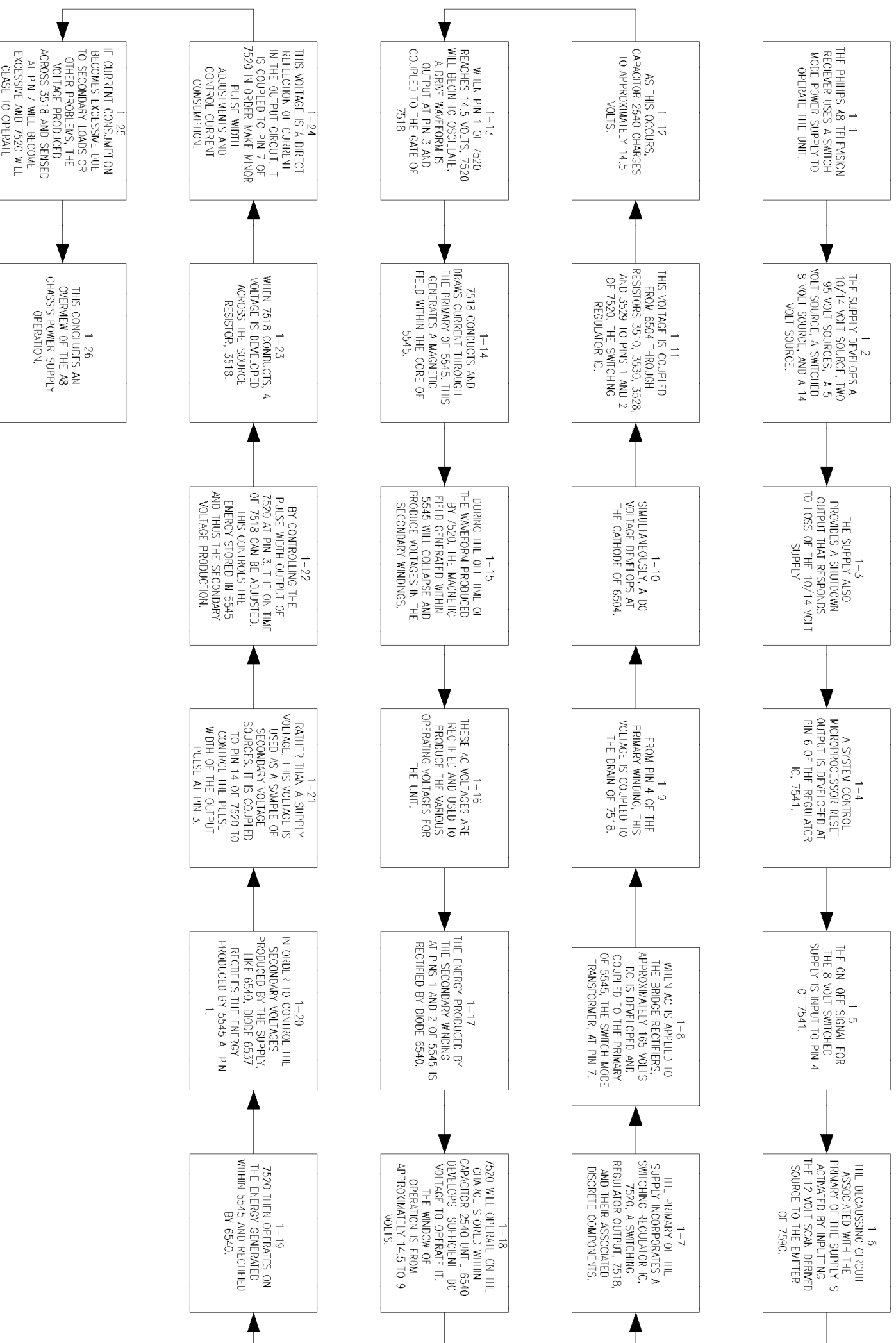
SAFETY NOTICE: ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

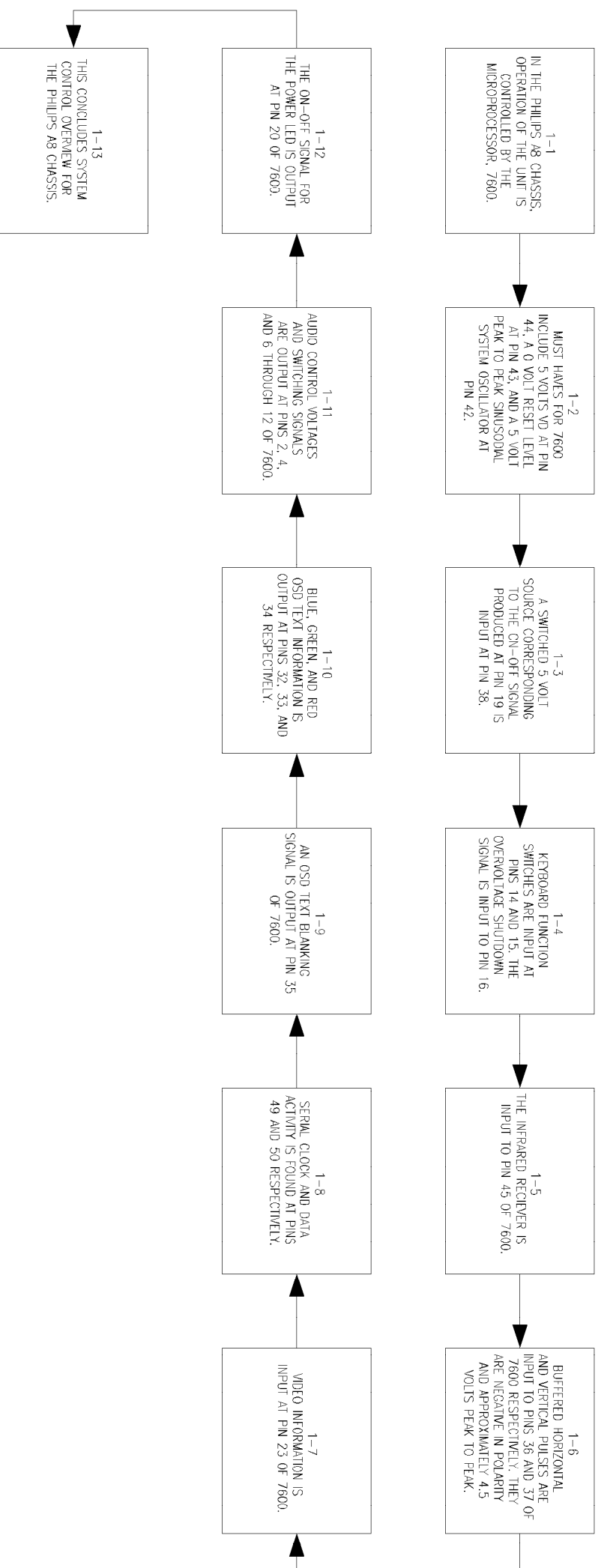
TR – 3 HORIZONTAL DEFLECTION FOR A8



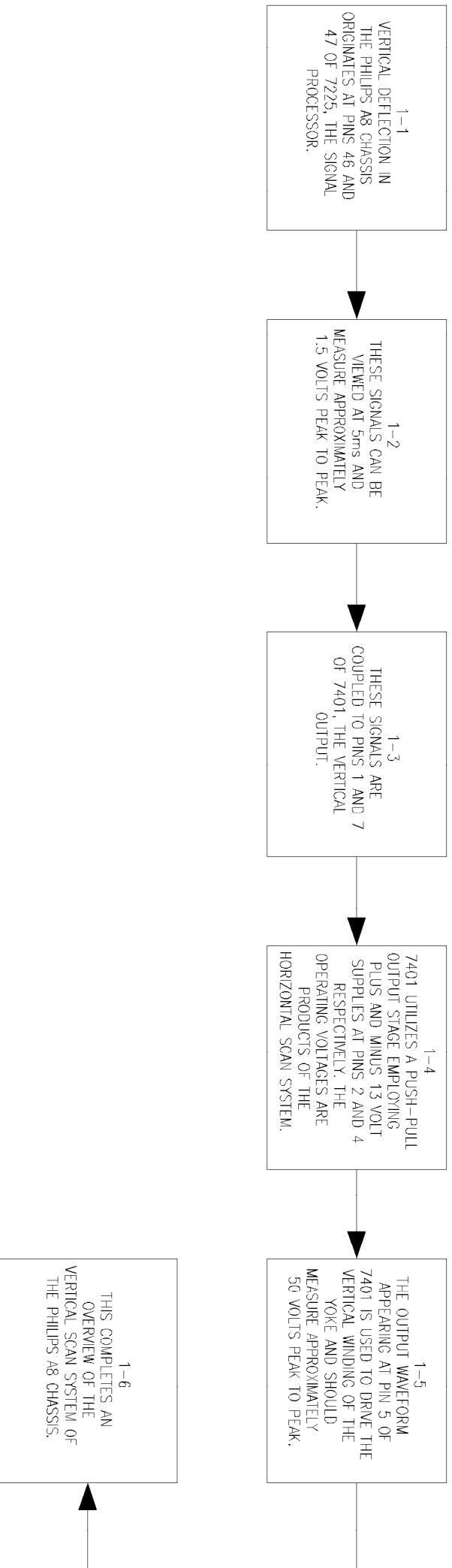
TR – 1 POWER SUPPLY TRAINING FOR A8



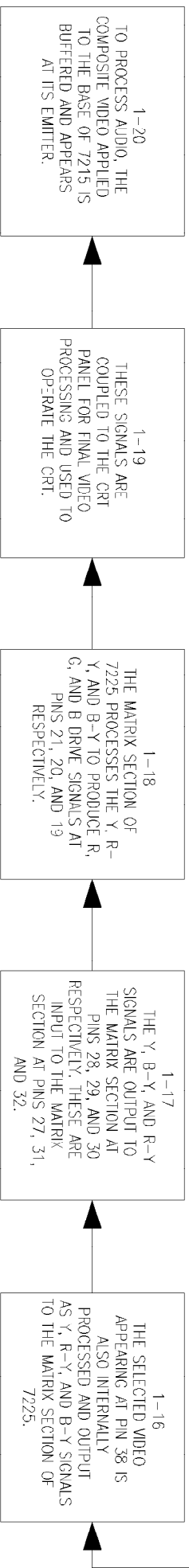
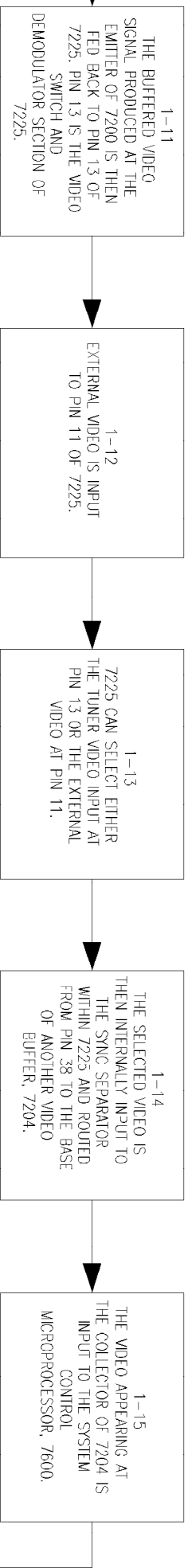
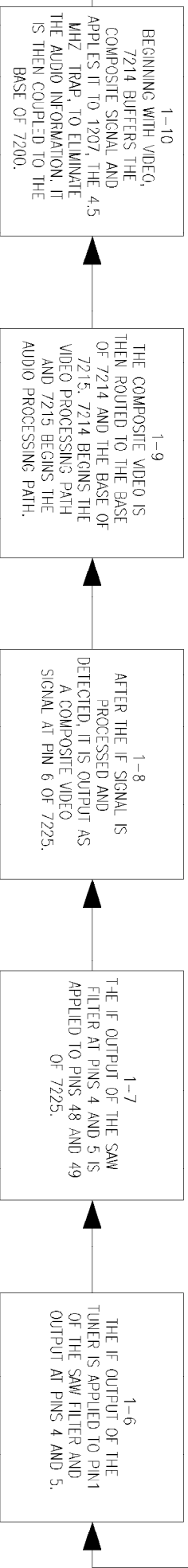
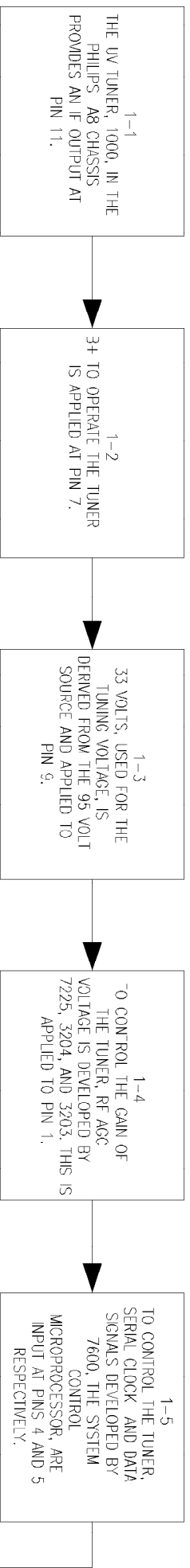
TR – 2 SYSTEM CONTROL TRAINING FOR A8



TR - 4 VERTICAL SCAN FOR A8



TR - 5 VIDEO AND AUDIO SIGNAL PATHS FOR A8



A

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Parts List

REFER TO SAFETY GUIDELINES

SAFETY NOTICE: ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

A8 MAIN CHASSIS

2002	1uF, 50V, Electrolytic	4835	121	47406	2450	0.68uF, 250V, Polypro (W/A48JLL40X46 CRT)	4835	121	47653
2005	100pF, 5%, 50V, Ceramic (Not Used In 20" Latam)	4835	122	87012	2450	0.39uF, 250V, Polypro (20" Models)	4835	121	47607
2008	1000pF, 50V, Ceramic	4835	122	87023	2451	1uF, 63V, Polyester	4835	121	47427
2010	2200uF, 16V, Electrolytic	4835	124	47701	2452	470uF, 10V, Electrolytic	4835	124	47705
2011	100pF, 5%, 50V, Ceramic (Not Used In 20" Latam)	4835	122	87012	2453	470uF, 25V, Electrolytic	4835	124	47719
2016	0.047uF, 25V, Electrolytic	4835	124	47708	2455	10uF, 50V, Electrolytic	4835	124	47499
2104	10uF, 50V, Electrolytic (19" w/Chld Lck)	4835	124	47499	2456	1uF, 160V, Electrolytic	4835	124	47709
2105	10uF, 50V, Electrolytic (19" w/Chld Lck)	4835	124	47499	2460	0.033uF, 100V, Polyester	4835	121	47598
2108	10uF, 50V, Electrolytic	4835	124	47499	2461	27pF, 50V, Ceramic	4835	122	47607
2110	1uF, 50V, Electrolytic (Stereo Models)	4835	121	47406	2462	4700pF, 2kV, Ceramic	4835	122	47635
2113	10uF, 50V, Electrolytic (19" w/Chld Lck)	4835	124	47499	2463	100uF, 50V, Electrolytic	4835	124	47563
2114	10uF, 50V, Electrolytic (19" w/Chld Lck)	4835	124	47499	2464	0.1uF, 50V, Ceramic	4835	122	87375
2115	100uF, 50V, Electrolytic (w/Headphones)	4835	124	47563	2465	820pF, 50V, Ceramic	4835	122	87589
2116	100uF, 50V, Electrolytic (w/Headphones)	4835	124	47563	2466	390pF, 50V, Ceramic	4835	122	87094
2117	56pF, 50V, Ceramic	4835	122	87373	2467	820pF, 50V, Ceramic	4835	122	87589
2120	50V470pF, Ceramic (13", 19" w/Chld Lck, w/AS D039, Latam)	4835	122	47614	2468	0.1uF, 50V, Ceramic	4835	122	87375
2121	470pF, 50V, Ceramic (19" w/Chld Lck, ASD03 9, Latam)	4835	122	47614	2469	390pF, 2kV, Ceramic	4835	122	47628
2128	100pF, 5%, 50V, Cer (19" St w/A48KRD89X, AS D039/040)	4835	122	87012	2470	22uF, 250V, Electrolytic	4835	124	47021
2128	33pF, 50V, Cer (19" w/Chld Lck & A48KRD89X, All Latam)	4835	122	87414	S 2471	0.022uF, 50V, Ceramic	4835	122	47617
2128	4700pF, 50V, Ceramic (13&19" Mono)	4835	122	87415	2476	390pF, 50V, Ceramic	4835	122	87094
2129	10uF, 50V, Electrolytic	4835	124	47499	2480	1000uF, 16V, Electrolytic	4835	124	47699
2130	2200pF, 50V, Ceramic (13" w/Chld Lck)	4835	122	87544	2485	820pF, 50V, Ceramic	4835	122	87589
2131	82pF, 50V, Ceramic	4835	122	87593	2487	820pF, 50V, Ceramic	4835	122	87589
2132	330pF, 50V, Ceramic	4835	122	87287	S 2500	0.47uF, 250V, Polyester	4835	121	47569
2136	0.47uF, 63V, Polyester (All 13&19" Mono)	4822	121	42008	2502	2200pF, 2kV, Ceramic	4835	122	47624
2137	2200pF, 50V, Ceramic (13&19" Mono)	4835	122	87544	2504	2200pF, 2kV, Ceramic	4835	122	47624
2140	47uF, 50V, Electrolytic (All 13&19" Mono)	4835	124	47668	2505	2200pF, 2kV, Ceramic	4835	122	47624
2141	0.22uF, 63V, Polyester (All 13&19" Mono)	4835	121	47603	2508	330uF, 200V, Elec (Not Used In 13" AMV&19", 20" Latam)	4835	124	47669
2142	220uF, 25V, Electrolytic (All 13&19" Mono)	4835	124	47557	2508	220uF, 400V, Electrolytic (13" AMV&19", 20" Latam)	4835	124	47711
2143	0.1uF, 50V 10%, Ceramic (13&19" Mono)	4835	122	87375	2510	470pF, 1kV, Ceramic	4835	122	47459
2144	1uF, 50V, Electrolytic (All 13&19" Mono)	4835	121	47406	2517	1000pF, 50V, Ceramic	4835	122	87023
2198	330pF, 10%, 50V, Ceramic (w/Headphones)	4835	122	47185	2518	330pF, 1kV, Ceramic	4835	122	47632
2199	330pF, 10%, 50V, Ceramic (w/Headphones)	4835	122	47185	2519	470pF, 50V, Ceramic	4835	122	47614
2200	0.1uF, 50V, Ceramic	4835	122	87375	2520	82pF, 50V, Ceramic	4835	122	87593
2201	0.022uF, 50V, Ceramic	4835	122	87538	2521	2200pF, 50V, Ceramic	4835	122	87544
2202	0.22uF, 100V, Electrolytic	4835	121	47092	2522	2200pF, 50V, Ceramic	4835	122	87544
2203	0.1uF, 16V, Ceramic	4835	122	87595	2524	470pF, 50V, Ceramic	4835	122	87451
2209	0.1uF, 50V, Ceramic	4835	122	87375	2529	0.1uF, 50V, Ceramic	4835	122	87375
2211	2.2uF, 50V, Electrolytic	4835	124	47502	2530	1uF, 50V, Electrolytic	4835	121	47406
2212	.022uF, 50V, Ceramic	4835	122	87538	2531	560pF, 630V, Polypro	4835	121	47656
2213	0.1uF, 50V, Ceramic	4835	122	87375	2532	1000pF, 50V, Ceramic (Not Used In Latam)	4835	122	87023
2215	0.22uF, 25V, Ceramic	4835	122	87594	2533	330pF, 50V, Ceramic	4835	122	87287
2217	100uF, 10V, Electrolytic	4835	124	47704	2534	1000pF, 50V, Ceramic	4835	122	87023
2221	0.1uF, 50V, Ceramic	4835	122	87375	2537	0.1uF, 63V, Polyester	4835	121	47602
2222	0.1uF, 50V, Ceramic	4835	122	87375	2540	100uF, 25V, Electrolytic	4835	124	47501
2223	100pF, 5%, 50V, Ceramic	4835	122	87012	S 2541	4700pF, 50V, Polyester	4835	121	47592
2224	1000uF, 16V, Electrolytic	4835	124	47699	S 2545	4700pF, 250V, Ceramic	4835	122	97023
2225	100pF, 5%, 50V, Ceramic	4835	122	87012	S 2546	4700pF, 250V, Ceramic (All w/Headphones)	4835	122	97023
2226	1uF, 50V, Electrolytic	4835	121	47406	2550	1000pF, 10%, 1kV, Ceramic	4835	122	47663
2260	10uF, 50V, Electrolytic	4835	124	47499	2551	47uF, 160V, Electrolytic	4835	124	47712
2261	.022uF, 50V, Ceramic	4835	122	87538	2552	470pF, 500V, Ceramic	4835	122	47211
2272	3300pF, 50V, Ceramic	4835	122	87294	2553	1000pF, 50V, Ceramic	4835	122	87369
2273	0.1uF, 16V, Ceramic	4835	122	87595	2554	0.22uF, 16V, Ceramic	4835	122	87603
2277	15pF, 50V, Ceramic	4835	122	87592	2555	0.22uF, 25V, Ceramic	4835	122	87594
2283	.047uF, 50V, Ceramic	4835	122	87503	2560	1500pF, 50V, Ceramic (w/A48KRD89X CRT, All 13" & Latam)	4835	122	87591
2284	0.047uF, 50V, Ceramic	4835	122	87503	2561	2200uF, 25V, Electrolytic	4835	124	47593
2285	0.047uF, 50V, Ceramic	4835	122	87503	2562	2200uF, 25V, Electrolytic	4835	124	47593
2403	1uF, 50V, Electrolytic	4835	121	47406	2563	220uF, 16V, Electrolytic	4835	124	47734
2406	2200pF, 50V, Ceramic	4835	122	87544	2570	1000pF, 50V, Ceramic	4835	122	87369
2409	4700pF, 50V, Ceramic	4835	122	87415	2571	1500uF, 35V, Electrolytic	4835	124	47714
2410	0.1uF, 63V, Polyester	4835	121	47602	2572	100pF, 5%, 50V, Ceramic	4835	122	87012
2414	0.22uF, 63V, Polyester	4835	121	47603	2585	0.022uF, 50V, Ceramic (Not Used In 13")	4835	122	87538
2420	0.1uF, 50V, Ceramic	4835	122	87375	2586	0.047uF, 25V, Electrolytic	4835	124	47708
2421	10uF, 50V, Electrolytic	4835	124	47499	2601	0.22uF, 25V, Ceramic	4835	122	87594
2425	22uF, 25V, Electrolytic	4835	124	47707	2602	0.047uF, 25V, Electrolytic	4835	124	47708
2430	10uF, 50V, Electrolytic	4835	124	47499	2603	1000pF, 10%, 50V, Ceramic (All Stereo Mode ls)	4835	122	87023
2434	0.1uF, 50V, Ceramic	4835	122	87375	2604	1000pF, 10%, 50V, Ceramic	4835	122	87023
2436	1000pF, 50V, Ceramic	4835	122	87023	2605	1000pF, 10%, 50V, Ceramic (All Stereo Mode ls)	4835	122	87023
2437	1000pF, 50V, Ceramic	4835	122	87023	2606	1000pF, 10%, 50V, Ceramic (All Stereo Mode ls)	4835	122	87023
2440	2200pF, 50V, Polyester	4835	121	47589	2607	1000pF, 10%, 50V, Ceramic (19" St wA48KRD89X, 19" Latam)	4835	122	87023
2442	0.22uF, 25V, Ceramic	4835	122	87594	2611	10uF, 50V, Electrolytic	4835	124	47499
2443	470uF, 25V, Electrolytic	4835	124	47719	2621	82pF, 50V, Ceramic	4835	122	87593
2444	1uF, 63V, Polyester	4835	121	47427	2622	82pF, 50V, Ceramic	4835	122	87593
S 2445	9100pF, 1.6kV, Polypro (W/A48JLL40X46 CRT)	4835	121	47654	2623	0.022uF, 50V, Ceramic	4835	122	87538
S 2445	0.01uF, 1.6kV, Polypro (W/A48KZL70X CRT,)	4835	121	47611	2630	10uF, 50V, Electrolytic	4835	124	47499
S 2445	8200pF, 1.6kV, Pp (13", 20" & W/A48KZL70X/A48 AFN36X CRT)	4835	121	47614	2639	0.1uF, 10%, 50V, Ceramic	4835	122	87375
2448	47uF, 160V, Electrolytic	4835	124	47713	2650	820pF, 50V, Ceramic	4835	122	87589
2449	330pF, 10%, 1kV, Ceramic (W/A48JLL40X46 CRT)	4835	122	47662	2652	820pF, 50V, Ceramic	4835	122	87589
2449	220pF, 10%, 1kV, Ceramic (W/A48KRD89X CRT)	4835	122	47661	2653	0.01uF, 50V, Ceramic	4835	122	87024
2449	1000pF, 10%, 1kV, Ceramic (W/A48KZL70X CRT)	4835	122	47373	2654	470uF, 25V, Electrolytic	4835	124	47719
2449	470pF, 10%, 1kV, Ceramic (20" Models)	4835	122	47459	2664	0.1uF, 50V, Ceramic	4835	122	87375
2449	820pF, 10%, 1kV, Ceramic (W/A48AFN36X CRT)	4835	122	47625	2666	0.1uF, 50V, Ceramic	4835	122	87375
2450	0.47uF, 250V, Polypro (13" Models)	4835	121	47608	2670	100pF, 5%, 50V, Ceramic	4835	122	87012
2450	.56uF, 250V, Pp (19" Mdls Not Mdls w/A48JLL40X46 CRT)	4835	121	47609	2671	100uF, 25V, Electrolytic	4835	124	47501
	S = Safety Part Be sure to use exact replacement part.				2674	100pF, 5%, 50V, Ceramic	4835	122	87012

2679	100pF, 10%, 50V, Ceramic	4835 122 47004	3401	4.7 ohm, 5%, 1/2W, MF (W/A48AFN36X) . . .	4835 110 47023
2681	0.1uF, 10%, 50V, Ceramic	4835 122 87375	3401	3.9 ohm, 5%, 1/2W, MF (NotUsed In 13" or w/	
2682	47pF, 50V, Ceramic	4835 122 87017		A48AFN36X)	4835 116 57781
2683	27pF, 50V, Ceramic	4835 122 87381	3402	4.7 ohm, 5%, 1/2W, MF (W/A48AFN36X CRT) . .	4835 110 47023
2685	2200pF, 50V, Ceramic	4835 122 87544	3402	9.1 ohm, 1/2W, MF (All 13" Models)	4835 116 57744
2690	100pF, 5%, 50V, Ceramic	4835 122 87381	3402	3.9 ohm, 5%, 1/2W, MF (NotUsed In 13" or w/	
2691	100pF, 5%, 50V, Ceramic	4835 122 87381		A48AFN36X)	4835 116 57781
2692	100pF, 5%, 50V, Ceramic	4835 122 87381	3403	15k, 1/10W, MF	4835 111 37458
2693	100pF, 5%, 50V, Ceramic	4835 122 87381	3404	2.2k, 2/3W, MF	4835 116 57676
2694	0.1uF, 50V, Ceramic (Models	4835 122 87375	3406	220 ohm, 1/2W, MF	4835 116 57705
2695	0.1uF, 50V, Ceramic (Models	4835 122 87375	3407	220 ohm, 1/2W, MF	4835 116 57705
3020	100 ohm, 1/10W, MF	4835 111 37432	3410	139k, 1/10W, MF	4835 111 27051
3022	100 ohm, 1/10W, MF	4835 111 37432	3411	2.2k, 2/3W, MF	4835 116 57676
3050	10 ohm, 1/2W, MF	4835 116 57097	3412	10k, 1/10W, MF	4835 111 37216
3120	270 ohm, 1/10W, MF (13&19"Mono)	4835 111 37424	S 3413	1.5 ohm, 1/3W, MF	4835 116 57664
3121	150 ohm, 1/2W, MF (All Stereo W/ASD039 Bo		3415	1.0k, 5%, 1/10W, MF	4822 051 10102
	ard)	4835 116 57696	3417	1.0k, 5%, 1/10W, MF	4822 051 10102
3121	1.0k, 5%, 1/10W, MF (13&19"Mono)	4835 116 57685	3418	100k, 1/10W, MF	4835 111 37434
3123	6.8k, 1/2W, MF (13&19"Mono)	4835 116 57736	3419	1M, 1/10W	4835 111 37217
3128	1.8k, 1/2W, MF (13&19"Mono)	4835 116 57702	3420	22k, 1/2W, MF	4835 116 57706
3130	47k, 1/2W, MF (13&19"Mono)	4835 116 57725	3421	82k, 1/10W, MF	4835 111 37277
3131	270 ohm, 1/2W, MF (13&19"Mono)	4835 116 57709	3422	22k, 1/2W, MF	4835 116 57706
3141	1.0k, 5%, 1/10W, MF (13&19"Mono)	4822 051 10102	3423	1.0k, 5%, 1/10W, MF	4822 051 10102
3141	0 ohm (All Stereo Models)	4835 111 27056	3427	8.2k, 1/2W, MF	4835 116 57742
3160	22k, 1/2W, MF (19"w/Chld Lck, w/ASD039, Lat		3428	820 ohm, 1/10W, MF	4835 111 37466
	am)	4835 116 57706	S 3430	4.7 ohm, 1/3W, MF	4835 116 57667
3161	4.6k, 1/2W, MF (19"w/Chld Lck, w/ASD039, La		S 3431	4.7k, 5%, 1/2W, MF (20")	4835 116 57778
	tam)	4835 116 57724	S 3432	4.7k, 5%, 1/2W, MF (20")	4835 116 57778
3162	22k, 1/2W, MF (13", 19"w/Chld Lck, w/ASD039		3433	33k, 1/2W, MF	4835 116 57715
	, Latam)	4835 116 57706	3434	10k, 1/10W, MF	4835 111 37216
3163	4.6k, 1/2W, MF (19" Stereo w/ASD039/043, Lat		3435	270k, 1/2W, MF	4835 116 57756
	am&13")	4835 116 57724	3436	1k, 1/2W, MF	4835 116 57685
3164	75ohm, 1/2W, MF (13", 19"w/Chld Lck, w/ASD03		3437	1k, 1/2W, MF	4835 116 57685
	9, Latam)	4835 116 57739	3440	1.0k, 5%, 1/10W, MF	4822 051 10102
3165	22 ohm, 1/2W, MF (13", 19" w/Chld Lck, w/ASD		3441	120k, 1/10W, MF	4835 111 27043
	039, Latam)	4835 116 57708	3442	22 ohm, 1/2W, MF	4835 116 57708
3171	47k, 5%, 1/10W, MF (19" w/Chld Lck) . . .	4835 111 37445	3443	560 ohm, 1/10W, MF	4835 111 27054
3172	750 ohm, 5%, 1/10W, MF (19" w/Chld Lck) .	4835 111 27088	S 3444	10k, 2W, Metal Oxide	4835 116 67241
3173	1.2k, 5%, 1/2W, MF (19" w/Chld Lck) . . .	4835 116 57691	3445	10 ohm, 2W, Metal Oxide	4835 116 67236
3174	470 ohm, 1/10W, MF (19" w/Chld Lck) . . .	4835 111 37259	3446	1.5k, 2/3W, MF	4835 116 57675
3175	220k, 1/10W, MF (19" w/Chld Lck)	4835 111 37235	3447	1k, 1/2W, MF	4835 116 57685
3176	1.0k, 5%, 1/10W, MF (19" w/Chld Lck) . . .	4822 051 10102	3448	5.6 ohm, 5%, 5W, Wire Wound	2322 251 41568
3177	100k, 5%, 1/10W, MF (19" w/Chld Lck) . . .	4835 111 37434	S 3449	1 ohm, 1/2W, MF	4835 116 57109
3178	47k, 5%, 1/10W, MF (19" w/Chld Lck) . . .	4835 111 37445	S 3450	3.9 ohm, 1/3W, MF	4835 116 57666
3179	750 ohm, 5%, 1/10W, MF (19" w/Chld Lck) .	4835 111 27088	S 3451	1 ohm, 5%, 1/2W, MF	4835 116 57109
3180	1.2k, 5%, 1/2W, MF (19" w/Chld Lck) . . .	4835 116 57691	S 3452	1 ohm, 1/3W, MF	4822 111 30483
3181	470 ohm, 1/10W, MF (19" w/Chld Lck) . . .	4835 111 37259	3456	68k, 1/2W, MF	4835 116 57737
3182	220k, 1/10W, MF (19" w/Chld Lck)	4835 111 37235	3457	68k, 1/2W, MF	4835 116 57737
3183	1.0k, 5%, 1/10W, MF (19" w/Chld Lck) . . .	4822 051 10102	3458	68k, 1/2W, MF	4835 116 57737
3184	100k, 1/10W, MF (19" w/Chld Lck)	4835 111 37434	3459	1.2k, 2/3W, MF	4835 116 57674
3192	47ohm, 1/2W, MF (13w/Chld, 19w/A48KRD89X &		3460	10k, 5%, 1/2W, MF (Not Used In 13")	4835 116 57686
	ChldLk, Lat)	4835 116 57727	3460	15k, 1/2W, MF (13")	4835 116 57698
3193	47ohm, 1/2W, MF (13" ChldLk, 19"w/A48KRD89X/		3461	27k, 1/2W, MF	4835 116 57712
	ChldLk, Lat)	4835 116 57727	3462	6.8k, 1/2W, MF	4835 116 57736
3201	390 ohm, 1/10W, MF	4835 111 37253	S 3470	4.7 ohm, 5%, 1/2W, MF	4835 110 47023
3202	1.0k, 5%, 1/10W, MF	4822 051 10102	S 3471	33 ohm, 2W, Metal Oxide	4835 116 67237
3203	22k, 1/10W, MF (W/A48KRD89X CRT, 13"& Lata		S 3480	10 ohm, 5%, 1/2W, MF	4835 116 57097
	m)	4835 111 37441	S 3481	220 ohm, 1W, Metal Oxide	4835 116 57603
3204	4.6k, 1/10W, MF	4835 111 27052	S 3500	275V, Variable Resistor	4835 130 87143
3205	1.8k, 5%, 1/10W	4835 111 37231	3501	470 ohm, 1/2W, Carbon Composition	4835 110 47212
3206	100 ohm, 1/10W, MF	4835 111 37432	S 3502	4.7 ohm, 1/2W, MF (Not Used In 19" & 20"L	
3207	220 ohm, 1/2W, MF	4835 116 57705		atam)	4835 116 57009
3208	220 ohm, 5%, 1/2W, MF	4835 116 57799	3503	10ohm, 120VAC, PTC (NotUsed In 13"AMV, 19"L	
3209	1.0k, 5%, 1/10W, MF	4822 051 10102		atam, 20")	4835 116 47001
3210	470 ohm, 5%, 1/2W, MF	4835 116 57723	3504	9 ohm, 30%, 200V, PTC (13" AMV, 19" Latam &	
3211	470 ohm, 1/10W, MF	4835 111 37259		20")	4835 116 47014
3212	1k, 5%, 1/10W, MF	4822 051 10102	S 3506	2.2 ohm, 5W, Wire Wound	4835 112 27037
3214	1.0k, 5%, 1/10W, MF	4822 051 10102	S 3507	220 ohm, 3W, Metal Oxide (Not Used In AMV	
3215	1.0k, 5%, 1/10W, MF	4822 051 10102		Models)	4835 116 67246
3216	390 ohm, 1/10W, MF	4835 111 37253	S 3508	220 ohm, 3W, Metal Oxide (Not Used In AMV	
3217	390 ohm, 1/10W, MF	4835 111 37253		Models)	4835 116 67246
3218	1.0k, 5%, 1/10W, MF	4822 051 10102	S 3510	22k, 3W, Metal Oxide (Not Used In Latam M	
3220	100 ohm, 1/2W, MF	4835 116 57684		odels)	4835 116 67249
3221	100 ohm, 1/2W, MF	4835 116 57684	S 3510	33k, 3W, Metal Oxide (Latam)	4835 116 67251
3223	1k, 1/2W, MF	4835 116 57685	3512	15k, 1/10W, MF	4835 111 37458
3224	560k, 5%, 1/10W, MF	4835 111 27094	3513	180k, 1/10W, MF	4835 111 37484
3225	56 ohm, 1/10W, MF	4835 111 27058	S 3514	200 ohm, 5%, 5W, Metal Oxide (Not Used In	
3227	56 ohm, 1/10W, MF	4835 111 27058		AMV)	4835 116 67284
3229	56 ohm, 1/10W, MF	4835 111 27058	S 3515	200 ohm, 5%, 5W, Metal Oxide (Not Used In	
3230	1k, 5%, 1/10W	4822 051 10102		AMV)	4835 116 67284
3231	1k, 5%, 1/10W	4822 051 10102	3517	10k, 1/10W, MF	4835 111 37216
S 3234	2.2 ohm, 1/3W, MF	4822 052 10228	S 3518	0.22 ohm, 5%, 3W, Metal Oxide	4835 116 67242
3255	1.0k, 5%, 1/10W, MF	4822 051 10102	3520	82k, 1/10W, MF	4835 111 37277
3256	1.0k, 5%, 1/10W, MF	4822 051 10102	3521	330 ohm, 1/2W, MF	4835 116 57713
3257	1.0k, 5%, 1/10W, MF	4822 051 10102	3525	33 ohm, 1/3W, MF	4835 116 57727
3265	560 ohm, 1/10W, MF (13" & 20")	4835 111 27054	3528	150 ohm, 1/2W, MF	4835 116 57696
3265	3.3k, 1/10W, MF (Not Used In 13" & 20") .	4835 111 37247	3529	4.7 ohm, 1/2W, MF	4835 110 47023
3266	100 ohm, 1/2W, MF	4835 116 57684	3530	3.9k, 1/2W, MF	4835 116 57721
3267	1/10W, 15k, MF	4835 111 37458	3532	0 ohm, MF (20" Latam)	4835 111 27056
3273	100k, 1/10W, MF	4835 111 37434	3532	5.6k, 1/10W, MF (Not Used In 20" Latam) .	4835 111 37376
3280	560 ohm, 1/2W, MF	4835 116 57731	3534	220k, 1/10W, MF	4835 111 37235
3401	3.3 ohm, 1/2W, MF (W/A48KZL70X, A48JLL40X4		3536	39k, 1/10W, MF	4835 111 27051
	6, All 13")	4835 116 57717			

S = Safety Part Be sure to use exact replacement part.

3537	10k,1/10W,MF	4835	111	37216	6443	Diode BYD33D	4835	130	37009
3538	100k,1/2W,MF	4835	116	57687	6444	Zener Diode BZX79-C39	4835	130	37911
3539	18k,5%,1/2W,MF	4835	110	57187	6445	Diode BYD33M	4835	130	37012
3540	4.7k,Potentiometer EVND8AB	4835	103	17004	6449	Diode BYD33D	4835	130	37009
3541	47 ohm,2W,Metal Oxide	4835	116	67238	6451	Diode 1N4148	4835	130	37048
3542	4.7M,5%,1/2W,MF (19" & 20" Latam)	4835	116	57009	6454	Diode BYD33D	4835	130	37009
3543	68 ohm,5%,1W,Metal Oxide	4835	116	67255	6455	Diode BYD33J	4835	130	37094
S 3545	2.2 ohm, 5%,1/2W,MF	4835	116	57653	6456	Diode BYD33J	4835	130	37094
S 3546	4.7 ohm,1/2W,MF	4835	116	57009	6461	Diode 1N4148	4835	130	37048
3552	3.3k,1/10W,MF	4835	111	27039	6464	Diode 1N4148	4835	130	37048
3554	1.5k,1/10W,MF	4835	111	27038	6468	Diode BYD33D	4835	130	37009
S 3555	68 ohm,3W,Metal Oxide	4835	116	67245	6470	Diode BYD33J	4835	130	37094
3565	10k,1/10W,MF	4835	111	37216	6480	Zener Diode BZX79-C10	4835	130	37014
3570	10 ohm,1/10W,MF	4835	111	37363	6481	Diode BYD33D	4835	130	37009
3595	22k,1/10W,MF (Not Used In 13")	4835	111	37441	6502	Diode 1N5062	4822	130	41275
3596	1.0k,5%,1/10W,MF (Not Used In 13")	4822	051	10102	6503	Diode 1N5062	4822	130	41275
3601	8.2k 1/8W,Resistor Pack	4835	111	97047	6504	Diode 1N5062	4822	130	41275
3602	2.2k,1/8W,Resistor Pack	4835	111	97049	6505	Diode 1N5062	4822	130	41275
3603	8.2k,1/8W,Resistor Pack	4835	111	97048	6507	Diode 1N5062	4822	130	41275
3604	10k,5%,1/10W	4835	111	37216	6508	Diode 1N5062	4822	130	41275
3605	10k,5%,1/10W	4835	111	37216	6510	Zener Diode BZX79-C20	4835	130	37282
3606	10k,5%,1/10W	4835	111	37216	6537	Diode BAV21	4822	130	30842
3607	8.2k,1/10W,MF	4835	111	37448	6540	Diode BAV21	4822	130	30842
3608	100k,1/2W,MF	4835	116	57687	6550	Diode	4835	130	37773
3616	0 ohm,MF	4835	111	27056	6560	Diode BYV27-200	4835	130	37463
3617	12k,1/2W,MF	4835	116	57692	6570	Diode BYV27-200	4835	130	37463
3618	15k,1/2W,MF	4835	116	57698	6610	Zener Diode BZX79-C33	4835	130	37904
3621	100 ohm,1/10W,MF	4835	111	37432	6651	Zener Diode Diode,BZX79-F9V1	0053	023	90274
3622	100 ohm,1/10W,MF	4835	111	37432	6653	Zener Diode BZX79-C8V2	4835	130	37503
3623	10k,1/10W,MF	4835	111	37216	6663	LED LTL-307P	4835	130	97096
3624	100 ohm,1/10W,MF	4835	111	37432	7105	Transistor BC547B (13&19" Mono)	4835	130	47055
3625	100 ohm,1/10W,MF	4835	111	37432	7106	IC TDA7052B/N1 (13&19" Mono)	4835	209	88542
3630	6.8k,1/2W,MF (13&19"Mono)	4835	116	57736	7113	Transistor BC847B (19" w/Chld Lck)	4822	130	60511
3630	3.3k,5%,1/2W,MF (All Stereo Models)	4835	116	57714	7114	Transistor BC847B 19" w/Chld Lck)	4822	130	60511
3632	1.0k,5%,1/10W,MF (19" w/A48KRD89X & ASD039/040)	4835	116	57685	7117	Transistor BC847B (19" w/Chld Lck)	4822	130	60511
3634	4.6k,1/2W,MF	4835	116	57724	7118	Transistor BC847B (19" w/Chld Lck)	4822	130	60511
3636	1.0k,5%,1/10W,MF (19" w/A48KRD89X&ASD039/040)	4835	116	57685	7200	Transistor BC847B	4822	130	60511
3637	2.2k,5%,1/2W,MF	4835	110	47006	7204	Transistor BC847B	4822	130	60511
3640	10k,1/10W,MF (Stereo Models)	4835	111	37216	7214	Transistor BC847B	4822	130	60511
3641	10k,1/10W,MF (Stereo Models)	4835	111	37216	7215	Transistor BC847B	4822	130	60511
3642	10k,1/2W,MF	4835	116	57686	7220	Transistor BC847B	4822	130	60511
3650	1k,1/2W,MF	4835	116	57685	7225	TDA8373C/N3	4835	209	88544
3653	1 ohm,1/10W,MF	4835	116	57779	7265	Transistor BC85	5322	130	60508
3654	8.2k,1/2W,MF	4835	116	57742	7401	IC TDA9302H	4835	209	88531
3655	100 ohm,1/2W,MF	4835	116	57684	7420	Transistor BC85	5322	130	60508
3656	470 ohm,1/2W,MF	4835	116	57723	7440	Transistor BC847B	4822	130	60511
3657	100 ohm,1/2W,MF	4835	116	57684	7441	Transistor BC368	4835	130	47382
3659	665 ohm,1/6W,MF (20" Latam)	4835	116	57777	7445	Transistor BUT11AX	4835	130	48117
3659	470 ohm,2/3W,MF (Not Used In 20" Latam)	4835	116	57681	7480	Transistor BC368	4835	130	47382
3662	1.0k,5%,1/10W,MF	4835	116	57685	7518	TP6NA60FI	4835	130	48109
3663	680 ohm,1/10W,MF	4835	111	37271	S 7520	IC MC44603A	4835	209	88537
3664	100 ohm,5%,1/2W,MF	4835	116	57684	7541	IC TDA8139	4835	209	88538
3665	1k,5%,1/10W	4822	051	10102	7590	Transistor BC85 (Not Used In 13")	5322	130	60508
3666	27k,1/10W,MF	4835	111	37442	7600	IC P83C569/016S1, (W/ChildLock,All Mono, 13"&Latam)	4835	209	88571
3667	4.6k,1/10W,MF (Not Used In 19" & 20"Latam)	4835	111	27052	7600	IC P83C569/013S1 (19" w/A48KRD89X&ASD039/040)	4835	209	88572
3667	6.8k,5%,1/10W (19&20"Latam)	4835	111	37272	7603	Transistor BC847B,Reset Buffer	4822	130	60511
3668	1k,5%,1/10W	4822	051	10102	7608	Transistor BC847B,13V Monitor	4822	130	60511
3670	100 ohm,1/2W,MF	4835	116	57684	7620	IC ST24W04B1,Memory	4835	209	88532
3671	3.3k,1/2W,MF	4835	116	57714	7650	Transistor BC847B	4822	130	60511
3673	430 ohm,2/3W,MF (13"&20" Models)	4835	116	57679	7663	Transistor BC85	5322	130	60508
3673	390 ohm,1%,2/3W,MF (Not Used In 13" & 20")	4835	116	57775	7681	Transistor BC847B,Vertical Buffer	4822	130	60511
3674	4.6k,1/2W,MF	4835	116	57724	7682	Transistor BC847B,Horizontal	4822	130	60511
3675	4.6k,1/2W,MF	4835	116	57724	7683	Transistor BC85,5.5V Switch	5322	130	60508
3676	6.8k,1/10W,MF	4835	111	37272	7684	Transistor BC847B,5.5V Switch	4822	130	60511
3681	10k,1/10W,MF	4835	111	37216	5010	Peaking Coil,0.68uH	4835	157	67058
3682	47 ohm,5%,1/2W	4835	116	57727	5101	Peaking Coil,22uH	4835	157	67076
3684	10k,1/2W,MF	4835	116	57686	5201	Peaking Coil,100uH	4835	157	67071
3685	68k,1/2W,MF	4835	116	57737	5203	Peaking Coil,22uH	4835	157	67069
3686	33k,1/2W,MF	4835	116	57715	5206	Peaking Coil,8.2uH	4835	157	67073
3688	4.6k,1/10W,MF	4835	111	27052	5260	Peaking Coil	4835	157	67082
3689	4.6k,1/10W,MF	4835	111	27052	5441	Linearity Correction(All 20" Models)	4835	116	67261
3690	1.8k,1/2W,MF	4835	116	57702	5442	Peaking Coil,4.7uH	4835	157	67065
3694	820 ohm,1/2W,MF	4835	116	57732	S 5445	Flyback Transformer(only in 20v)	4835	140	67175
3695	820 ohm,1/2W,MF	4835	116	57732	S 5446	Flyback Transformer(only in 13v and 19v)	4835	140	67167
3696	820 ohm,1/2W,MF	4835	116	57732	5451	Peaking Coil,33uH	4835	157	67055
6105	Diode 1N4148 (19" Mono w/A48KRD89X&13" Mono)	4835	130	37048	5456	Peaking Coil,33uH	4835	157	67083
6106	Diode 1N4148 (19" Mono w/A48KRD89X & 13" Mono)	4835	130	37048	5457	Peaking Coil,33uH	4835	157	67083
6109	Znr BZX79-C8V2 (13,19" w/ChldLk,w/ASD039,All Latam)	4835	130	37503	5458	Line Filter	4835	152	17011
6132	Zener Diode BZX79-C2V7	4835	130	37909	5516	120 ohm,100MHz,Coil	4835	157	67078
6265	Diode 1N4148 (w/A48KRD89X CRT,All 13"&Latam)	4835	130	37048	5517	120 ohm,100MHz,Coil	4835	157	67078
6420	Diode 1N4148	4835	130	37048	5518	120 ohm,100MHz,Coil	4835	157	67078
6421	Diode 1N4148	4835	130	37048	5519	120 ohm,100MHz,Coil	4835	157	67078
6440	Diode BYD33D	4835	130	37009	5540	Peaking Coil,4.7uH	4835	157	67057
6441	Diode EPG20D	4835	130	80931	5541	Line Correction Coil (20")	4835	150	57085
					S 5545	Transformer (13")	4835	140	67172
					S 5545	Transformer (19")	4835	140	67173
					S 5545	Transformer (20")	4835	140	67175
					5550	120 ohm,100MHz,Coil	4835	157	67078
					5551	Peaking Coil,27uH	4835	157	67052

5552	Peaking Coil 62uH.	4835	157	67085	3327	1.5k,1/2W,1.5k,Carbon.	4835	110	47034
5553	Peaking Coil,10uH.	4835	157	67068	3331	1.0K,5%,1/10W,MF	4822	051	10102
5554	Peaking Coil 62uH.	4835	157	67085	3332	390 ohm,1/10W,MF	4835	111	37253
5570	120 ohm,100MHz,Coil (Latam).	4835	157	67078	3333	39 ohm,5%,1/10W,MF	3198	021	53990
5571	Peaking Coil,10uH.	4835	157	67068	S 3334	18k,5%,3W,Metal Oxide.	4835	116	67285
5572	120 ohm,100MHz,Coil (Not Used In Latam)	4835	157	67078	S 3335	330 ohm,1/2W,MF.	4835	116	57671
5573	120 ohm,100MHz,Coil.	4835	157	67078	S 3336	220 ohm,1/2W,MF.	4835	116	57669
5601	Peaking Coil,6.8uH	4835	157	67066	3337	1.5k,1/2W,Carbon	4835	110	47034
5603	Peaking Coil,8.2uH	4835	157	67073	3338	100 ohm,5%,1/10W	4835	111	37432
5604	Peaking Coil,6.8uH	4835	157	67066	3339	100 ohm,5%,1/10W	4835	111	37432
5620	Peaking Coil,6.8uH	4835	157	67072	3340	100 ohm,5%,1/10W	4835	111	37432
0020	Headphone Jack (All w/Headphone Jack).	4835	265	97468	S 3341	10 ohm, 5%,1/2W,MF	4835	116	57097
133	Bimos Shield	3135	011	00630	3342	220k,1/2W,MF	4835	116	57018
136	9703 Spring.	3135	011	00700	3347	1k,1/3W,MF	4835	116	57663
137	9703 Spring.	3135	011	01030	S 3371	1 ohm,1/3W,MF(Not Used In 20" Latam)	4822	111	30483
143	heaksink f/sops.	3135	011	00670	S 3371	3.3 ohm,5%,1/3W (20" Latam).	4835	116	57776
144	9703 Spring.	3135	011	01030	S 3372	3.3 ohm,5%,1/3W (20" Latam).	4835	116	57776
145	Shield f/Microprocessor.	3135	011	00640	S 3372	1 ohm,1/3W,MF(Not Used In 20" Latam)	4822	111	30483
150	9703 Heatsink.	3135	011	00680	S 3374	1.5k,1/2W,Carbon	4835	110	47034
151	LED Holder	3135	014	01300	6311	Diode BAV21.	4822	130	30842
168	Heatsink,Diode	3135	011	01480	6321	Diode BAV21.	4822	130	30842
170	Peaking Coil	4835	157	67079	6331	Diode 1N4148	4835	130	37048
176	9703 Heatsink.	3135	011	01440	6332	Diode BAV21.	4822	130	30842
177	IC, Spring.	3135	011	00710	6341	Diode 1N4148	4835	130	37048
205	9703 Shield.	3135	011	01420	6347	Zener Diode BZX79-C8V2	4835	130	37503
206	9703 Shield.	3135	011	01430	7301	Transistor BF422,Red Driver.	4822	130	41782
1000	Tuner.	4835	210	47096	7302	Transistor BF422,Green Driver.	4822	130	41782
1015	Saw Filter	4835	153	97022	7303	Transistor BF422,Blue Driver	4822	130	41782
1060	Switch	4835	280	47042	7304	Transistor BF423,Red Output.	4835	130	47004
1061	Switch	4835	280	47042	7305	Transistor BF422,Red Output.	4822	130	41782
1062	Switch	4835	280	47042	7306	Transistor BF423,Green Output.	4835	130	47004
1063	Switch	4835	280	47042	7307	Transistor BF422,Green Output.	4822	130	41782
1064	Switch (Not Used In 19" & 20"Latam).	4835	280	47042	7308	Transistor BF423,Blue Output	4835	130	47004
S 1080	12V Relay (Not Used In 13" & Latam).	4835	280	47043	7309	Transistor BF422,Blue Output	4822	130	41782
1104	Ceramic Filter	4835	152	17013	5370	Peaking Coil,1 ohm (w/A48KRD89X or A48A	4835	157	67061
1207	Ceramic Filter 4M5TPSMB B.	4835	154	17001	5370	Peaking Coil (Models w/A48JLL40X46 or A	4835	157	67087
1277	Crystal.	4835	242	77276	5370	Peaking Coil 33uH (20").	4835	157	58205
S 1500	1 Amp Fuse (Not Used In Latam)	4835	253	97162	L5	9 Pin CRT Socket (Not Used In w/A48KRD8	4835	265	97464
S 1500	2 Amp Fuse (Not Used In Latam AMV Model	4835	253	97163	L6	9 Pin CRT Socket (w/A48KRD89X)	4835	265	97464
	s).	4835	253	97163					
S 1500	4 Amp Fuse (Used In Latam AMV Models).	4835	253	97165					
S 1571	1 Amp Fuse	4835	253	97162					
S 1572	1 Amp Fuse	4835	253	97162					
1670	IR Receiver GPLU28QP	4835	219	47286					
1681	Crystal 12M.	4835	122	97106					
3505	Surge Protect.	4835	116	97013					
L4	1 Pin Board Connector (W/A48KRD89X,13" &	3135	010	00470					
	Latam)								
M2A	1 Pin Bd Cn(W/A48KRD89X,13"&Latam Excep	3135	010	00470					
	t w/EMA822).								
M2A4	1 Pin Board Connector (EMA822).	3135	010	00470					
M2B	1 Pin Bd Cn(W/A48KRD89X,13"&Latam Excep	3135	010	00470					
	t w/EMA822).								
M2B4	1 Pin Board Connector (EMA822)	3135	010	00470					
M4	2 Pin Board Connector.	2422	025	12667					
M5	1 Pin Board Connector.	3135	010	00470					
M7	5 Pin Connector.	0046	246	60001					
M8	4 Pin Bd Cn(W/A48KRD89X CRT,All113" & La	2422	025	14671					
	tam Models).								
M10	2 Pin Board Connector (13"w/Chld Lck).	2422	025	14668					
M20	1 Pin Board Connector (19"w/Chld Lck).	2422	026	04803					
M23	4 Pin Board Connector (19"w/Chld Lck).	2422	026	04804					
M30	4 Pin Board Connector (w/Headphones).	2422	025	14672					
M31	3 Pin Cinch Connector (Models w/ASD039,	2422	026	04699					
	All Latam)								
M32	2 Pin Board Connector (All 13" w/Chld L	2422	026	04619					
	ck).								
M40	4 Pin Board Connector (13" w/Chld Lck)	2422	025	14672					
M41	2 Pin Board Connector (13" w/oChld Lck	2422	025	14668					
	& 19" Mono).								
SK1	Main Power Switch(W/Main Switch)	4835	148	27052					
APT189 CRT MODULE									
2313	330pF,50V,Ceramic.	4835	122	87287	C700	100uF,16V,Electrolytic	4835	124	47706
2323	330pF,50V,Ceramic.	4835	122	87287	C701	4700pF,50V,Ceramic	4835	122	87415
2333	330pF,50V,Ceramic.	4835	122	87287	C702	0.22uF,50V,Ceramic	4835	122	87087
2341	0.1uF,250V,Polyester	4835	121	47278	C703	1.0uF 50V,Electrolytic	4835	121	47406
2342	22uF,250V,Electrolytic	4835	124	47021	C704	47uF,16V,Electrolytic.	4835	124	47567
S 2373	0.033uF,630V,Polyester	4835	121	47605	C705	10uF,50V,Electrolytic.	4835	124	47499
3311	1k,1/2W,MF	4835	116	57685	C706	0.022uF,50V,Ceramic.	4835	122	87538
3312	390 ohm,1/10W,MF	4835	111	37253	C707	1.0uF,50V,Electrolytic	4835	121	47406
3313	39 ohm,5%,1/10W,MF	3198	021	53990	C708	0.1uF,50V,Ceramic.	4835	122	87375
S 3314	18k,5%,3W,Metal Oxide.	4835	116	67285	C709	1.0uF,50V,Electrolytic	4835	121	47406
S 3315	330 ohm,1/2W,MF.	4835	116	57671	C710	1000pF,50V,Ceramic	4835	122	87023
S 3316	220 ohm,1/2W,MF.	4835	116	57669	C711	2700pF,50V,Ceramic	4835	122	87502
3317	1.5k,1/2W,Carbon	4835	110	47034	C712	0.1uF,50V,Ceramic.	4835	122	87375
3321	1.0K,5%,1/10W ,MF.	4822	051	10102	C713	10uF,50V,Electrolytic.	4835	124	47499
3322	390 ohm,1/10W,MF	4835	111	37253	C714	2.2uF,50V,Electrolytic	4835	124	47502
3323	39 ohm,5%,1/10W,MF	3198	021	53990	C715	10uF,50V,Electrolytic.	4835	124	47499
S 3324	18k,5%,3W,Metal Oxide.	4835	116	67285	C716	10uF,50V,Electrolytic.	4835	124	47499
S 3325	330 ohm,1/2W,MF.	4835	116	57671	C717	10uF,16V,Electrolytic.	4835	124	47716
S 3326	220 ohm,1/2W,MF.	4835	116	57669	C718	100pF,50V,Ceramic (ASD039 only).	4835	122	87012
					C719	100pF,50V,Ceramic (ASD039 only).	4835	122	87012
					C720	1000pF,50V,Ceramic (ASD039 only).	4835	122	87023
					C721	1000pF,50V,Ceramic (ASD039 only).	4835	122	87023
					C722	10uF,50V,Electrolytic(ASD039 only).	4835	124	47499
					C723	10uF,50V,Electrolytic(ASD039 only).	4835	124	47499
					C724	10uF,16V,Electrolytic.	4835	124	47716
					C726	10pF,50V,Ceramic (ASD039 only).	4835	122	87412
					C727	10pF,50V,Ceramic (ASD039 only).	4835	122	87412
					C728	1000pF,50V,Ceramic (ASD039 only).	4835	122	87023
					C729	1000pF,50V,Ceramic (ASD039 only).	4835	122	87023
					C730	47uF,16V,20% Electrolytic(ASD039 only)	4835	124	47722
					C731	1000pF,50V,Ceramic (ASD039 only).	4835	122	87023
					C732	47uF,16V,Electrolytic(ASD039 only).	4835	124	47567
					C733	47uF,16V,Electrolytic(ASD039 only).	4835	124	47567
					C734	100uF,16V,Electrolytic(ASD039 only).	4835	124	47706
					C735	47uF,16V,Electrolytic(ASD039 only).	4835	124	47567
					C736	0.22uF,50V,Ceramic (ASD039 only).	4835	122	87087
					C737	0.22uF,50V,Ceramic (ASD039 only).	4835	122	87087
					C738	10uF,50V,Electrolytic(ASD039 only).	4835	124	47499
					C739	10uF,50V,Electrolytic(ASD039 only).	4835	124	47499
					C740	47uF,16V,Electrolytic(ASD039 only).	4835	124	47567
					C741	1000pF,50V,Ceramic (ASD039 only).	4835	122	87023
					C742	2700pF,50V,Ceramic	4835	122	87596
					C743	2700pF,50V,Ceramic	4835	122	87596
					C744	C 0.47uF,63V,.	4822	121	42008
					C745	C0.47uF,63V,.	4822	121	42008
					C746	CC 2200pF,25V,.	4822	126	12147
					C747	CC 2200pF,25V,.	4822	126	12147

S = Safety Part Be sure to use exact replacement part.

C748	0.22uF, 50V, Ceramic	4835	122	87087	IC710	IC HEF4053BP, 2-Channel MultiDeplexer (A			
C749	0.22uF, 50V, Ceramic	4835	122	87087		SD039 only).	4835	209	17033
C750	2200pF, 50V, Ceramic	4835	122	87544	IC720	IC TA7668BP, AVL Controller (ASD039 only)	4835	209	88534
C751	2200pF, 50V, Ceramic	4835	122	87544	IC730	IC TDA7053A/N2, 1 Watt Amp.	4822	209	13706
C752	10uF, 16V, Electrolytic (ASD039 only)	4835	124	47716	Q701	Transistor BC857B.	5322	130	60508
C753	10uF, 50V, Electrolytic (ASD039 only)	4835	124	47499	Q702	Transistor BC847B.	4822	130	60511
C754	2200pF, 50V, Ceramic	4835	122	87544	Q703	Transistor BC857B.	5322	130	60508
C755	2200pF, 50V, Ceramic	4835	122	87544	Q704	Transistor BC847B (ASD039 only)	4822	130	60511
C760	220uF, 25V, Electrolytic	4835	124	47557	Q720	Transistor BC847B (ASD039 only)	4822	130	60511
C762	0.1uF, 50V, Ceramic.	4835	122	87375	Q730	Transistor BC847B.	4822	130	60511
C763	22uF, 50V, Electrolytic.	4835	124	47503	Q731	Transistor BC847B.	4822	130	60511
C764	10uF, 50V, Electrolytic.	4835	124	47499	Q732	Transistor BC847B.	4822	130	60511
S R700	10 ohm, 1/3W, MF	4822	111	30508	Q733	Transistor BC847B.	4822	130	60511
R701	5.6k, 1/10W, MF.	4835	111	37376	Z760	Zener Diode BZX79-C2V7	4835	130	37909
R702	3.3k, 1/10W, MF.	4835	111	37247	C1	9703 4 Pin Connector	2422	025	14671
R703	15k 1/10W, MF.	4835	111	37458	C2	9703 9 Pin Connector	2422	025	15098
R704	1.5k, 1/10W, MF.	4835	111	37437	C3	9703 9 Pin Connector	2422	025	15098
R705	13k, 5%, 1/10W, MF.	4835	111	27059	C3A	9703 10 Pin Connector.	2422	025	15099
R706	10k, 1/2W, MF.	4835	116	57686	H730	9703 Heatsink.	3135	011	01410
R707	10k, 1/10W, MF.	4835	111	37216	B11	9703 Buss Wire	0322	179	00003
R708	1.0k, 5%, 1/10W, MF.	4822	051	10102	BR1	0 ohm, MF.	3198	021	90010
R709	1.0k, 5%, 1/10W, MF.	4822	051	10102	BR2	0 ohm, MF.	4835	111	27056
R712	22k, 1/2W, MF (ASD039 only)	4835	116	57706	BR4	0 ohm, MF.	4835	111	27056
R713	10k, 1/2W, MF (ASD039 only)	4835	116	57686	B700	9703 Buss Wire (ASD040 only)	0322	179	00003
R714	100 ohm, 1/2W, MF.	4835	116	57684	B740	9703 Buss Wire	0322	179	00003
R715	100 ohm, 1/2W, MF.	4835	116	57684					
R716	10k, 1/2W, MF (ASD039 only)	4835	116	57686					
R717	10k, 1/2W, MF (ASD039 only)	4835	116	57686					
R718	100 ohm, 1/2W, MF (ASD039 only)	4835	116	57684					
R719	100 ohm, 1/2W, MF (ASD039 only)	4835	116	57684					
R720	1.0k, 5%, 1/10W, MF.	4822	051	10102					
R721	1.2k, 1/10W, MF.	4835	111	27042					
R722	820 ohm, 1/2W, MF.	4835	116	57741					
R723	470 ohm, 1/2W, MF.	4835	116	57723					
R724	1k, 1/2W, MF.	4835	116	57685					
R725	100k, 1/2W, MF (ASD039 only)	4835	116	57687					
R726	100k, 1/2W, MF (ASD039 only)	4835	116	57687					
R727	100k, 1/2W, MF (ASD039 only)	4835	116	57687					
R728	100k, 1/2W, MF (ASD039 only)	4835	116	57687					
R729	100k, 1/2W, MF (ASD039 only)	4835	116	57687					
R730	1 ohm, 5% 1/3W, MF (ASD039 only)	2322	205	33108					
R731	470k, 1/10W, MF (ASD039 only)	4835	111	37407					
R732	470k, 1/10W, MF (ASD039 only)	4835	111	37407					
R733	1.0k, 5%, 1/10W, MF (ASD039 only)	4822	051	10102					
R734	1.0k, 5%, 1/10W, MF (ASD039 only)	4822	051	10102					
R735	3.3k, 1/10W, MF (ASD039 only)	4835	111	37247					
R736	3.3k, 1/10W, MF (ASD039 only)	4835	111	37247					
R737	100 ohm, 1/10W, MF (ASD039 only)	4835	111	37432					
R738	100 ohm, 1/10W, MF (ASD039 only)	4835	111	37432					
R739	22k, 1/2W, MF (ASD039 only)	4835	116	57706					
S R740	10 ohm, 1/3W, MF (ASD039 only)	4822	111	30508					
R741	2.2k, 1/10W, MF (ASD039 only)	4835	111	27047					
R743	6K8, 1/2W, MF.	4835	116	57736					
R744	100 ohm, 1/10W, MF.	4835	111	37432					
R745	100 ohm, 1/10W, MF.	4835	111	37432					
R746	1.8k, 1/10W, MF.	4835	111	37231					
R747	1.8k, 1/10W, MF.	4835	111	37231					
R748	3.3k, 1/10W, MF.	4835	111	37247					
R749	3.3k, 1/10W, MF.	4835	111	37247					
R750	1.8k, 1/10W, MF.	4835	111	37231					
R751	1.8k, 1/10W, MF.	4835	111	37231					
R752	470k, 1/10W, MF.	4835	111	37407					
R753	470k, 1/10W, MF.	4835	111	37407					
R754	3.3k, 1/10W, MF.	4835	111	37247					
R755	3.3k, 1/2W, MF.	4835	116	57714					
R756	470k, 1/10W, MF.	4835	111	37407					
R757	470k, 1/10W, MF.	4835	111	37407					
R758	22k, 1/2W, MF.	4835	116	57706					
R759	22k, 1/2W, MF.	4835	116	57706					
R760	22k, 1/2W, MF.	4835	116	57706					
R761	22k, 1/2W, MF.	4835	116	57706					
R762	51k, 5%, 1/10W, MF (ASD039 only)	4835	111	27057					
R763	51k, 5%, 1/10W, MF (ASD039 only)	4835	111	27057					
R764	1.8k, 1/10W, MF (ASD039 only)	4835	111	37231					
R765	470 ohm, 1/2W, MF.	4835	116	57723					
R766	10k, 1/10W, MF.	4835	111	37216					
R767	5.6k, 1/2W, MF.	4835	116	57732					
R768	1.2k, 1/10W, MF (ASD039 only)	4835	111	27042					
R768	1.5k, 1/10W, MF (ASD040 only)	4835	111	37437					
R769	1.2k, 1/10W, MF (ASD039 only)	4835	111	27042					
R769	1.5k, 1/10W, MF (ASD040 only)	4835	111	37437					
R770	220 ohm, 1/2W, MF.	4835	116	57705					
R771	220 ohm, 1/2W, MF.	4835	116	57705					
R772	1.0k, 5%, 1/10W, MF (ASD039 only)	4822	051	10102					
R773	1.0k, 5%, 1/10W, MF (ASD039 only)	4822	051	10102					
R774	10k, 1/10W, MF.	4835	111	37216					
R775	R 1/10W, 1K J	4822	051	10102					
R776	R 1/10W, 1K J	4822	051	10102					
Y700	Ceramic Resistor	4835	122	97103					
D760	Diode 1N4148	4835	130	37048					
D761	Diode 1N4148	4835	130	37048					
IC700	IC LA7765, Stereo Decoder	4835	209	88533					

ASD042/043 DBX STEREO MODULE

1101	Ceramic Resistor	4835	122	97102
2101	10uF., 50V, Electrolytic	4835	124	47499
2102	0.47uF., 63V, Polyester.	4822	121	42008
2103	4.7uF., 50V, Electrolytic.	4835	124	47506
2104	0.22uF., 63V, Polyester.	4835	121	47603
2105	10uF., 50V, Electrolytic	4835	124	47499
2106	2.2uF., 50V, Electrolytic.	4835	124	47502
2107	2.2uF., 50V, Electrolytic.	4835	124	47502
2108	0.01uF., 50V, Polyester.	4835	121	47593
2109	0.015uF., 50V, Polyester	4835	121	47593
2110	2.2uF., 50V, Electrolytic.	4835	124	47502
2111	8200pF., 50V, Polyester.	4835	121	47585
2112	0.15uF., 63V, Polyester.	4835	121	47599
2113	100uF., 16V, Electrolytic.	4835	124	47706
2114	0.15uF., 63V, Polyester.	4835	121	47599
2115	100uF., 16V, Electrolytic.	4835	124	47706
2116	4.7uF., 50V, Electrolytic.	4835	124	47506
2117	4.7uF., 50V, Electrolytic.	4835	124	47506
2118	0.1uF., 63V, Polyester	4835	121	47602
2119	10uF., 50V, Electrolytic	4835	124	47499
2120	4.7uF., 50V, Electrolytic.	4835	124	47506
2121	0.047uF., 100V, Polyester.	4835	121	47005
2122	1.0uF., 50V, Electrolytic.	4835	121	47406
2123	1.0uF., 50V, Electrolytic.	4835	121	47406
2124	10uF., 50V, Electrolytic	4835	124	47499
2125	10uF., 50V, Electrolytic	4835	124	47499
2126	2.2uF., 50V, Electrolytic.	4835	124	47502
2127	2.2uF., 50V, Electrolytic.	4835	124	47502
2128	4.7uF., 50V, Electrolytic.	4835	124	47506
2129	2.2uF., 50V, Electrolytic.	4835	124	47502
2130	8.2uF., 50V, Polyester	4835	121	47585
2147	220uF., 25V, Electrolytic.	4835	124	47557
2149	0.1uF., 63V, Polyester	4835	121	47602
2151	10uF., 50V, Electrolytic	4835	124	47499
2152	10uF., 50V, Electrolytic	4835	124	47499
2153	0.027uF., 50V, Polyester)	4835	121	47595
2154	0.027uF., 50V, Polyester	4835	121	47595
2155	0.33uF., 63V, Polyester.	4835	121	47223
2156	0.33uF., 63V, Polyester.	4835	121	47223
2157	0.033uF., 50V, Polyester	4835	121	47596
2158	0.033uF., 50V, Polyester	4835	121	47596
2159	0.22uF., 63V, Polyester.	4835	121	47603
2160	0.22uF., 63V, Polyester.	4835	121	47603
2161	2200pF., 50V, Ceramic.	4835	122	47007
2162	2200pF., 50V, Ceramic.	4835	122	47007
2163	22uF., 50V, Electrolytic	4835	124	47503
2164	10uF., 50V, Electrolytic	4835	124	47499
2169	10uF., 16V, Electrolytic	4835	124	47716
2170	10uF., 16V, Electrolytic	4835	124	47716
2171	0.1uF., 63V, Polyester	4835	121	47602
2172	220uF., 25V, Electrolytic.	4835	124	47557
3101	2.2k, 5%, 1/2W, Metal Film	4835	110	57187
3102	18k, 5%, 1/2W, Metal Film.	4835	110	47006
3103	2.2k, 5%, 1/2W, Metal Film.	4835	110	57187
3104	18k, 5%, 1/2W, Metal Film.	4835	110	47006
3105	2.2k, 5%, 1/2W, Metal Film	4835	110	47006
3106	8.2k, 1/2W, Metal Film	4835	116	57683
3107	160 ohm, 1/2W, Metal Film.	4835	116	57682
3153	6.8k, 1/2W, Metal Film	4835	116	57736
3154	6.8k, 1/2W, Metal Film	4835	116	57736
3157	3.3k, 1/2W, Metal Film	4835	116	57714
3158	3.3k, 1/2W, Metal Film	4835	116	57714
3159	1.8k, 1/2W, Metal Film	4835	116	57702
3160	1.8k, 1/2W, Metal Film	4835	116	57702
3161	1.8k, 1/2W, Metal Film	4835	116	57702

3162	1.8k, 1/2W, Metal Film	4835	116	57702
3163	470 ohm, 1/2W, Metal Film.	4835	116	57726
3164	470 ohm, 1/2W, Metal Film.	4835	116	57726
3165	22k, 1/2W, Metal Film.	4835	116	57706
3166	22k, 1/2W, Metal Film.	4835	116	57706
3167	22k, 1/2W, Metal Film.	4835	116	57706
3168	22k, 1/2W, Metal Film (.	4835	116	57706
3169	470 ohm, 1/2W, Metal Film.	4835	116	57726
3170	470 ohm, 1/2W, Metal Film.	4835	116	57726
3171	270 ohm, 1/2W, Metal Film.	4835	116	57709
3173	5.6k, 1/2W, Metal Film	4835	116	57732
3179	1.0k, 1/2W, Metal Film	4835	116	57685
3180	1.0k, 1/2W, Metal Film	4835	116	57685
3181	10k, 1/2W, Metal Film.	4835	116	57686
3182	10k, 1/2W, Metal Film.	4835	116	57686
3190	820 ohm, 1/2W, Metal Film	4835	116	57741
3191	820 ohm, 1/2W, Metal Film.	4835	116	57741
3194	220 ohm, 1/2W, Metal Film.	4835	116	57705
3195	220 ohm, 1/2W, Metal Film.	4835	116	57705
6101	Diode 1N4148	4835	130	37048
6102	Zener Diode BZX79, 2.7V.	4835	130	37909
6103	Diode 1N4148	4835	130	37048
7103	IC TDA7057AQ/N2 (ASD042 only).	4835	209	88543
7103A	IC TDA7053A/N2 (ASD043 only)	4822	209	13706
7101	IC TDA9852/V2, Stereo Decoder.	4835	209	88493
7105	Transistor BC547B, Bass Boost.	4835	130	47055
7106	Transistor BC547B, Bass Boost.	4835	130	47055
7107	Transistor BC547B, Treble Boost.	4835	130	47055
7108	Transistor BC547B, Treble Boost.	4835	130	47055
C1	5 Pin Board Connector.	2422	025	14672
C2	9 Pin Board Connector.	2422	025	15098
C3	9 Pin Board Connector.	2422	025	15098
C3A	10 Pin Board Connector	2422	025	15099
H101	9703 Shield.	3135	011	01190
H103	9703 Heatsink (ASD042 only).	3135	011	01130
H103A	9703 Heatsink (ASD043 only).	3135	011	01410
9100	9703 Buss Wire.	0322	179	00003

Master Screen (VG2)/White Balance Setup

1. With the set OFF, rotate VG2 counter clockwise.
2. Power set on, without a signal, and rotate VG2 clockwise until snow is visible.
3. Enter Service Adjustment Mode ([refer to service adjustment note 4](#)) .
4. Select Auto Kine Bias (AKB) and ensure that it is set to on. Use cursor keys, left and right, to turn on and off. Exit using power button on the remote. Remove power from set for 10 seconds, reapply power and turn set ON.
5. Enter the customer menu by pressing the menu button on the remote and set brightness, picture to 31 and color to 0.
6. Apply an NTSC color bar signal to the antenna/cable input terminal and tune to the active channel
7. Connect an oscilloscope, 20V per division & 10uSec time base, to the top end of 3327 on the CRT Board. Observe the stairstep pattern while adjusting VG2

Hint: Counter clockwise will compress bottom of stairstep pattern. Clockwise will compress top of stairstep pattern.

8. Adjust VG2 midway between top and bottom compression.

White Balance

1. Enter Service Adjustment Mode ([refer to service adjustment note 4](#)) .
2. Turn off chroma on generator and leave gray scale bars
3. Select white tone in the service menu and press cursor right.
4. Select normal by pressing cursor up/down. Select Red, Green and Blue, cursor right/left, and adjust, R/G/B, cursor right/left, for white balance.

Tip 1: Begin with Red, Green and Blue of equal value in the mid 30s.

Tip 2: To adjust warm use the values of normal and add 6 to Red. To adjust cool add 6 to Blue.

5. Exit using power button on the remote. Remove power from set for 10 seconds, reapply power, turn set ON and confirm results.

Vertical Amplitude (VAM) Adjustment

1. Enter Service Alignment Mode ([refer to service adjustment note 4](#)) and then enter the Geometry sub-menu by pressing the cursor right button.
2. Select VAM, by using the cursor up or down button, from the Geometry sub-menu and input a crosshatch pattern to the antenna/cable input terminal.
3. Reduce the value so that the picture does not fill the entire screen.
4. Select VSH (Vertical Shift), by using the cursor up or down button, from the Geometry sub-menu and center the picture on the screen.
5. Select VAM from the Geometry sub-menu and increase the value to obtain a slight overscan.

Vertical Shift (VSH) Adjustment

1. Enter Service Alignment Mode ([refer to service adjustment note 4](#)) and then enter the Geometry sub-menu by pressing the cursor right button.
2. Select VSH, by using the cursor up or down button, and input a center cross pattern to the antenna/cable input terminal.
3. Adjust VSH so that the horizontal bar is properly centered.

Vertical Slope (VSL) Adjustment

1. Enter Service Alignment Mode ([refer to service adjustment note 4](#)) and then enter the Geometry sub-menu by pressing the cursor right button.
2. Select VSL, by using the cursor up or down button, from the Geometry sub-menu and input a crosshatch pattern to the antenna/cable input terminal.
3. Adjust VSL so that the squares at the bottom of the screen are equal in size to the squares at the top of the screen.

S- Correction (SC) Adjustment

1. Enter Service Alignment Mode ([refer to service adjustment note 4](#)) and then enter the Geometry sub-menu by pressing the cursor right button.
2. Select SC, by using the cursor up or down button, from the Geometry sub-menu and input a crosshatch pattern to the antenna/cable input terminal.
3. Adjust SC so that the squares at the center of the screen are equal in size to the squares at the top and bottom of the screen.
4. Exit the menu by pressing the Status key on the remote control transmitter.
5. Cycle the power by pressing the Power key once to turn the set off and again to turn the set on.

IF-PLL Adjustment

1. Connect a 400mV p-p signal to pin 1 of the saw filter (1015). Measure the amplitude with a 50MHz scope and a low capacitance probe. This signal should be either a color bar signal with a video carrier of 45.75MHz or a 45.75MHz marker signal modulated by 16KHz at 30-75% modulation.
2. Power ON the set and enter the Service Alignment Mode ([refer to service adjustment note 4](#)) .
3. Select Tuner by pressing the up or down key so that Tuner is highlighted.
4. Enter the Tuner menu by pressing the cursor right key.
5. Select IF-PLL by pressing the up or down key so that IF-PLL is highlighted.
6. Align IF-PLL by pressing the cursor left or right key until the value displayed for the AFA bit is 1. Continue adjusting the IF-PLL until the value displayed for the AFB bit toggles from 0 to 1, or 1 to 0, for a one-step change in the IF-PLL displayed value.
7. Select AGC by pressing the up or down key so that AGC is highlighted.
8. Adjust the AGC setting by pressing the cursor left or right key until the displayed AGC value is 10.
9. Exit the menu by pressing the Status key on the remote control transmitter.
10. Cycle the power by pressing the Power key once to turn the set off and again to turn the set on.